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AN  
EXPOSITION  
OF THE  
NATURE, TREATMENT, AND PREVENTION  
OF  
CONTINUED FEVER.

BY  
HENRY M'CORMAC, M.D.

“ Μυρίας μὲν γὰρ ἡμῶν ἀσχολίας παρέχει τὸ σῶμα, διὰ τὴν ἀναγκαίαν  
τροφὴν.” Plato in Phædone.

LONDON:  
LONGMAN, REES, ORME, BROWN, GREEN AND LONGMAN.

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MDCCCXXXV.







TO  
DRS. ELLIOTSON, GRAVES, AND ALISON,  
IN CONSIDERATION OF THEIR  
UNTIRING PROFESSIONAL ZEAL,  
AND THEIR  
NUMEROUS AND IMPORTANT ADDITIONS  
TO THE  
SCIENCE OF PRACTICAL MEDICINE,

*These Pages are Respectfully Inscribed, by*

**THE AUTHOR.**







## P R E F A C E .

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THE importance of fever is very great, whether as regards the interests and well-being of society, or as holding a place in the vast range of objects of attention, included in medical science. This importance can never be exhausted or under-rated, so long as sickness afflicts mankind, or therapeutic science is cultivated. Such being the case, we can hardly feel surprised that so great a host of inquirers have turned their attention to this disease—or that so many works have appeared on the subject. Many of these have quickly foundered in their course down the stream of time, while others have floated on, and will, it may fairly be presumed, continue for many ages, well worthy the attention of mankind. The writings of the Father of Medicine, still survive, and probably will continue to do so, for a long period to come. Few productions of a similar nature, will ever attain to an equal longevity; but the time must nevertheless arrive, in the progress of ages and of human knowledge, when even his works, and all those that have since appeared, shall cease to be consulted as sources of information. It is the necessary destiny of all imperfect productions. There is little cause for regret in this. Why should we desire that posterity should be confined to our limited stores? It is the happy and necessary tendency of knowledge, to supersede ignorance—of perfection to replace imperfection. Efforts however, will still continue to be made—equally desirable and equally useful, the results of which, may expect a longer or a shorter period of duration, according to their respective excellence. Some of these will be found worthy to form additions to the great fabric of the temple of knowledge—while others, will be as steps to the portico, constituting a mean portion of the structure indeed, but quite necessary to enable us to gain access to the interior.

It is very reasonably expected, that every one who brings the produce of his pen before the public, should also acquaint that public with his



reasons for doing so. Mine are easily enumerated—I desire if possible, to be useful to my fellow-creatures—to acquire the approbation of my professional brethren—and lastly, to turn to some account, the fleeting and irrevocable moments of the brief career, which is here allotted to us. I presume that no one will question the propriety of exertions grounded upon the preceding motives—how far they may realize their objects, it is not for me to calculate or anticipate.

My opportunities for information, have been sufficiently numerous, as well as of a highly practical nature. I have had ample experience of the disease in three different quarters of the globe—nor have I escaped its frequent infliction in my own person. For some years past also, I have been professionally connected with a useful public institution, whereby I have enjoyed almost every additional opportunity that I could wish, for cultivating a very close acquaintance with continued fever, in all its forms.\*

In the outline which follows, I have tried to be as brief as was consistent with clearness—and I have laboured, so far as it lay in my power, to omit nothing of interest connected with the disease. I have endeavoured to elucidate the results of my own experience, and supply its deficiencies, by a copious reference to the works of the best writers. I have found occasional difficulties in procuring access to various authors; and some to which I desired to refer, I have not been able to obtain. This will be obvious to any one who is aware of the limited nature of the literary resources which are available in most provincial towns, destitute of extensive collections of scientific works—a deficiency, that is ill supplied by any expenditure, that the majority of individuals can afford. If an allowance be made for this circumstance, I trust that my illustrations will not be found destitute of some importance, and considerable variety. I have also been at some pains, to refer to a class of authors in a language, which unfortunately, is less generally cultivated than it deserves—and I believe, that I shall be among the first, to bring the names of many of the writers whose works are quoted in the following pages, before the notice of an English public.

I have not been desirous of contributing to the mass of indigested theories and hypotheses, already extant on the subject of fever. It is of much more importance I conceive, to add to the storehouse of facts—since

\* The institution alluded to above, is the Belfast Dispensary and Fever Hospital.



these, if faithfully determined, are easily arranged in their proper order. My desire all along, has strictly been, to fulfil the objects announced in the title-page of my book—to determine with as much accuracy as lay in my power, the nature, the treatment, and the preventive measures, most appropriate in relation to continued fever. This I conceive, is to realize the greatest amount of usefulness, and to aim at that golden mediocrity, which, if steadily pursued, would redound so much to the advancement of medical science.

I now commit my little work to the decision of the public, whose voice after all, is the only just criterion of the merits of individual exertions.

*Belfast, January, 1835.*







## INTRODUCTION.

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OF all the morbid phenomena to which the human body is subject, those included under the term fever, are among the most remarkable, whether we regard their frequency or their intensity. No portion of mankind is exempt from the attacks of this disease. Its ravages under one or other of its protean forms, are not less frequent under the burning sun of the torrid zone, than in our own more temperate regions; and to such an extent does it afflict our race, that it is computed one half of those who die are carried off by it. That a minute acquaintance with so destructive a malady is highly important, is self-evident; yet, perhaps there is no disease, respecting which, in all its phases, and in every thing which relates to it, there is such a difference of opinion—and, in some respects, such defective information. To enumerate these, would require a volume, and almost a history of medicine itself; although such minuteness however, may not be necessary, it will perhaps prove interesting, to enter a little into the causes of this diversity of opinion.

Medicine is a branch of the study of nature; but those who formerly pursued it were not then, any more than at present, sufficiently acquainted with the collateral sciences, of which a certain knowledge is necessary, to illustrate and explain it: and more than any thing else, they did not always bring to their task well-schooled minds, accustomed to patient and continuous observation, and habitually conversant with the laws of the human understanding itself; with which, it may be said once for all, that some acquaintance is highly desirable, if not necessary, in every pursuit. If the acquisitions which I have here spoken of, had been possessed to a greater extent by medical inquirers, so much time would not have been thrown away in attempting to solve difficulties which did not come within the scope of human powers; and imaginary



solutions of such difficulties could not have been substituted in place of a rational knowledge of the functions of our bodies, whether in health or disease. So true it is, that the improvement of medicine must go hand in hand with the general advance of the human mind.

The phenomena which bear the name of fever, vary considerably in their amount as well as in their aspect, though a certain number must always be present, to enable us to affix the term. Some of these phenomena are sufficiently obvious: such are a burning heat on the surface, preceded or not by rigors, a rapid pulse, thirst, weakness, anorexia; but there are others, of which these are only the correlatives, that we are but partially aware of, and about which there is much difference of opinion. The state of the internal organs and functions is but little known to us, and, in all probability, will never be perfectly so; yet the essence of fever lies here. The external phenomena are part of the aggregate which we call fever: it is equally wrong, therefore, to say that the symptoms so called, alone are, or are not the disease, since they are as much a part of it as the internal phenomena which we do not immediately perceive, and, therefore, do not call symptoms.

A perfect definition of fever, or indeed of any disease, is, strictly speaking, impossible; a description, which includes all the phenomena of a disease, external and internal, from first to last, is alone correct: but since a definition can only include a few phenomena, it must necessarily be imperfect. These brief outlines, however, for such, definitions really are, may prove useful to beginners; but it should be explicitly avowed, that they can only include some of the earlier and more striking phenomena of disease.

From the names and definitions given to diseases, a learner might suppose that they were just the same from beginning to end; but this supposition would be equally absurd and untrue. The perverted or irregular phenomena of life to which we give the name of disease, vary from first to last during the course of every malady. The aggregate of functional and organic derangement, which we call a disease in its first stage, varies with more or less rapidity, from day to



day, and from hour to hour. There is a constant succession of changes, one series of morbid states succeeding another, while the individual elements of which each is composed, are constantly varying in their relations to each other, and to the condition of the frame at large.

A good deal of obscurity is thrown into our conception of fever by the desire which is so frequently felt to localize it; yet the ill success which has as yet, in my opinion, so invariably attended every attempt of this kind, might well serve to convince us of its impracticability. Fever is not a local disorder. Idiopathic fever, so called to distinguish it from that attending local inflammation, may indeed lead to local inflammation, but it does not seem necessarily complicated with it. Those who affirm the contrary have pointed out various organs as the primary seat; yet the organs thus supposed to take the initiative in the phenomena of fever, vary widely; and so far as I am able to judge, the cases of fever are very numerous indeed, in which either local inflammation does not take place at all, or when it does so, only at varying intervals, some time after the disease has been fully formed. In very many cases of fever, on the other hand, the local inflammation is slight, and, even upon the supposition of its primary occurrence, quite inadequate to occasion a disease of such magnitude. Organic derangement of some kind attends fatal cases of fever in most instances—perhaps all, in which death does not supervene from functional perversion, extreme debility or accident; but the mere existence of such derangement is not of itself a proof that the fever was caused by it, any more than it is a proof of the converse of this proposition. Very possibly there is an organic point of departure in fever; but we have not hitherto been able to demonstrate it, much less to ascertain that it consists in the inflammation of a given organ. The impression of a poison on the blood or nervous system, may perhaps suddenly induce the morbid series of phenomena which we call fever; but we are not thereby entitled to call fever a local disease, or an inflammation.

We are sometimes more profound than nature, sometimes less so; and certainly, in the case of fever, we are trying to



create a simplicity which does not appear to exist, when we would attempt to explain its very complicated phenomena by the one pathological condition of inflammation. The fact is, we do not yet know, unless to a very limited extent, the pathology of fever: and probably many of its phenomena, like the processes of life itself, will for ever escape the keenest scrutiny of human inquiry. Formerly, the mere externals of this remarkable malady almost exclusively chained the attention of the observer; latterly, however, the various organic morbid conditions which occasionally supervene during its course, are closely and deservedly studied: but the pneumonia, or enteritis, or phrenitis, which occur during the course of fever, are not fever exclusively, any more than a hot burning skin or quick pulse merely, are fever. These important complications should be carefully attended to; but as fever may occur in the absence of each or all of them, something else should be looked to as constituting its essence.

It is with humility I would venture to express it as my individual opinion, that fever consisted primarily in a lesion of innervation, varying in amount, and productive of all the different phenomena which distinguish the frame of one who suffers under this disease, from that of another in the enjoyment of perfect health. All the functions, those of assimilation, secretion, animal heat, absorption, sanguification, the internal and external senses; all the functions, in fine, which the nervous system is conceived, directly or indirectly, to be concerned in, are more or less deranged, and perverted from their normal condition. Hence, fever is a disease, not of one organ or one function, but eventually of all the organs and all the functions, varying in form and intensity in different individuals, without end. How the poison, or other exciting cause, operate in producing fever, we know almost as little as we do the formation of muscle, or blood, or bone; but it seems tolerably certain, that the nervous system may be affected in various ways, and through various channels; and that the character of the resulting disease will vary according to the nature and intensity of the exciting cause, and the condition of the individual and his different organs and functions, at the period of the attack.

There is no part of the body, fluid or solid, nor any function



or organ, which escape the influence of fever. All gradations take place, from the slightest primary influence, to the utter perversion and loss of every healthy feature. There is a circle of morbid action and reaction, which proceeds without intermission, till health returns or life is lost. Now, owing to the intricate and numerous sympathies which the different parts of the body maintain with each other, and which are incessantly modified in disease as in health, it becomes difficult to estimate the consequences which the loss or alteration of structure or function in one place, exert over those in another. The healthy condition of the blood is soon altered. From the change in the condition in the mucous membrane of the bronchia which commonly occurs in fever, not to speak of other causes, this vital fluid quickly ceases to receive that healthy change called arterialization; and as it is thus rendered unfit to perform its usual functions, we can form some idea of the universal confusion which must inevitably ensue from the presence of the diseased fluid in every structure. All the secretions are altered, and since the solid organs no longer receive their wonted nutriment and innervation, their functions are languidly or improperly performed, and even cease. The urinary and hepatic organs, the skin, the mucous membrane of the bronchia and intestinal canal, all become deranged, and no longer yield their usual healthy products; and as the function of innervation and the state of the blood are no longer the same, the process of interstitial secretion, the most important and most extensive, perhaps, of all the organic functions, varies widely from its normal condition. The flabby and unhealthy tissues no longer obtain, either in quantity or quality, the nourishment which they require. On the other hand, as the blood receives no accession from the solid daily food, it goes on losing more and more of its healthy organization. It is not arterialized any longer, and another source of degeneration is conjoined by the incessant addition of the various diseased materials, arising from interstitial absorption, and that going forward on the surfaces of the different excreting and secreting cavities.

As the brain and nervous system are enabled to continue their functions properly, only by the stimulus of the healthy



blood, it is obvious that strange confusion must result from the presence of this fluid in a state of disease. Vitiating and imperfect impulses are transmitted to all the organs of relation or sense, which, on the other hand, return back equally erroneous impressions. The internal senses, or in other words, all the internal organs which transmit sentient impressions to the brain, are in a similar condition with the external ones; and as I have said before, every function over which the brain and nervous system exert any influence, receives imperfect or erroneous impulses. We are quite too ignorant of the functions of the ganglionic system of nerves in health, to say how far they are deranged in disease; but there is no reason to suppose that they escape the universal degradation, or do not add to it. The respiratory nerves, those of motion, sensation, and all the other functions, are doubtless involved in one common state of derangement.

As the mind can receive no correct impressions from without, nor communicate any in return, owing to the state of the organs of relation, and as it is constantly receiving a number of sensations, for the most part highly painful, it is not surprising, when thus circumstanced, that it should exhibit almost every form of aberration. The theory of the intellectual functions in health is very imperfect; in disease, however, it is still more so.

Independent of the ordinary phenomena of fever, it is subject to numerous complications and anomalies; so numerous indeed, as to have laid the foundation for very many divisions. These divisions are useful enough in a practical point of view, and should not be wholly laid aside; but we ought not to forget, that in all of them fever is substantially the same. Independent of the grounds of distinction, which have been considered of sufficient importance to constitute distinct varieties of fever, there are numerous others of uncertain occurrence, but with which, it is of the utmost consequence to be well acquainted, whether we look upon them as the essentials, or only the occasional complications of fever. The principal and most important of these, is inflammation of the different organs—as pneumonia, peritonitis, inflammation and ulceration of the mucous membrane of the intestinal



canal, and affections of the brain. Metastases of different kinds may occur, and a vast variety of morbid phenomena, which as yet are far from being wholly recorded. Fever may supervene upon another complaint; and even when it ceases, may leave behind a great number of diseased conditions. It is not always well known what the circumstances are, which regulate the proclivity of any given organ to morbid changes during fever, nor how such morbid changes themselves arise. The previous diseases and mode of life of the individual, his age and constitution, as well as the climate and period of the year, will frequently, however, yield a clew. The epiphenomena thus arising during fever, do not commonly present the same aspect as when they occur in an isolated form, nor do they bear the same treatment. The pneumonia occurring in an individual debilitated and broken down by this overwhelming disease, is not the same that would take place in the person of a robust and vigorous man, in whom fever had not first set in; and so on with regard to other inflammations.

A remarkable phenomenon commonly occurs during fever, namely, muscular debility. It has been sometimes said of late, that this is not debility; but so long as words have a definite meaning, there is certainly debility, though arising under peculiar circumstances. As for the shivering and burning fits which accompany fever, it is impossible at present to explain them, as we do not know how heat is produced in the animal economy during health: it is evident, however, that the process is excessively deranged.

When we consider the shock which inflammation communicates to the system, particularly to the nervous apparatus, as well as the various morbid influences of inflamed organs, we need not feel surprised that sympathetic fever is one of its products. This is not always the case indeed, as the inflammation may be too local and insignificant to produce such a result, or it may be what is called latent. We do not know how it is that inflammation produces fever, nor how it is, when the former ceases or is subdued, that the fever commonly ceases also. It is however, one of the best ascertained and most important facts within the whole range of pathology, that fever will



cause inflammation, and inflammation fever, and, therefore, deserves our closest and most attentive consideration.

A long list of phenomena occurs during fever, which has here been briefly adverted to, and of which the consideration will be more properly deferred until I come to treat of these phenomena individually.

How the human frame ever recovers its healthy condition after the terrible confusion into which its functions have been plunged by a severe fever, affords matter for much reflection to every thinking mind. When we contemplate the entire prostration which exists in such a state, and reflect upon the minutiae of the mischief that has taken place, we can hardly conceive how order is re-established, or vigour restored. But certain it is, when no irrecoverable lesion of any organ or function has occurred, or previously existed, that recovery almost always takes place, not so much in consequence of human skill indeed, as owing to the powers of the frame itself. In ordinarily mild fevers, the attentions of the physician should be few and simple, and not unduly officious. He may dictate the personal attentions which the patient requires, and guard as well as he may against dangerous complications: in serious cases he may interfere more actively; but all his skill would be vainly exerted without the salutary efforts of nature. The evil principle which has occasioned the malady, gradually exhausts itself under favourable circumstances; the functional and organic confusion as gradually ceases, by a process, of which we have a very imperfect conception; and at length the individual is free from disease, but weak and exhausted. On the other hand, instances of fever sometimes, nay frequently, occur, of such violence, considered with reference to the individual attacked, that death seems inevitable, at least in the present condition of our therapeutic knowledge. But there are very many cases, in which the physician holds the power of saving in his hands; and there are, perhaps, none in which he may not alleviate and lessen suffering, if he cannot hasten or secure recovery. The number of favourable cases, however, will increase with the advance of medical science itself, and in the ratio of the skill and attention with which individuals acquire and apply it.



A very remarkable phenomenon distinguishes fever—namely, the difficulty, or more frequently the impossibility, that exists of arresting its course. It may sometimes be cut short in the onset, but when once fairly formed, although we may mitigate its intensity, it is commonly vain to try to stay its progress, by any effort of human skill.

The frequency of fever in any given population, is in the inverse ratio of its civilization. The more instructed, men are, and the better they are able to guard themselves against evil physical, and moral influences, the less will they be subject to fever. Want, misery, dirt, and undue exposure to atmospheric vicissitudes, are the powerful promoting causes of fever, and much more influential in leading to it, than mere malaria or contagion. The latter indeed, under ordinary circumstances, is so insignificant a cause, as to be unworthy of much consideration in a general review of the subject. During periods of epidemic increase however, the subject of contagion assumes a degree of importance commensurate with its increased and highly destructive agency.—We are apt to boast a good deal of the existing amount of civilization, but it is questionable whether the great mass of mankind have progressed very much in this respect, during the last two thousand years. The few who enjoy the benefits of wealth and education, have advanced it is true; but the advantages which they enjoy, only render the disparity between the rich and the poor more glaring. The peasant in our fields, and the artisan in our manufactories, seem almost as much subject as their predecessors ever were, to epidemic influences. And the physical condition of man, in these regions at least, so far as my own observation and that of travellers extends, is considerably inferior to that of the rude aborigines of Africa or America. With our population thus circumstanced, need we wonder at the dreadful ravages of epidemic diseases. Unless a great change takes place in the food, clothing, houses, habits and education of the working classes, I fear that we must long be subject to the repetition of similar catastrophes.

Physicians, unfortunately, have not the power to prescribe sanatory laws. Is it not extraordinary that no ministry of public health exists, of which medical men should form a



part? If the community had the same faith in the preventive as in the saving power of medicine—and it surely merits at least equal confidence—such a function as the above, would soon be called into existence; and yet the powers of medicine are infinitely greater to prevent, than to cure disease. Public prejudice, or carelessness, besides preventing so useful an application of medical knowledge, further contributes most powerfully to retard its progress, by the obstacles which are thus raised against the examination of bodies after death, and the prosecution of anatomy generally. Accuracy of diagnosis, or well-directed practice, cannot exist without a minute acquaintance with general and pathological anatomy; and it is painful to reflect on the evils which are necessarily contingent on the various impediments to these important branches of medical science. To use the words of the classic Freind—*“Neque ex ulla re magis, quam ex ea de qua nunc agimus, evinci potest, quantam opem conferat ad medicinæ usum anatomia.”* *Historia Medicinæ, Lugduni Batavorum.* 1734. P. 71.\*

\* The advantages of this important science are pointed out with great distinctness, in an able and original essay by Professor Macartney, entitled, “A Lecture on the uses of Anatomy and Physiology in various branches of Knowledge.” Dublin, 1826.



## FEVER—TYPHUS.

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THE morbid phenomena to which we give the name of fever, as I have already said, are among the most important and interesting of all those to which the human frame is subject. That they are so, arises from the frequency of their occurrence, and the mortality which occasionally attends them. Most of the fearful epidemics that have ravaged the world, have worn a febrile complexion. Plague, the black death, the sweating sickness, and ordinary typhus, only appear to be samples of the various aspects under which this protean disorder exhibits itself. Fever hitherto, has been the most rife of all diseases, and in the aggregate the most fatal; whether this will continue to be the case in the coming ages of the world, remains to be seen. The writings of Hippocrates number two and twenty centuries, but the additions to the knowledge which they contain on the subject, have not been commensurate with the immense lapse of time which has intervened since they appeared. The little that we know is associated with numerous uncertainties, and a warm strife has been maintained for hundreds of years on points, which, in many cases, do not come within the range of either direct or inductive observation.\* The spirit of hypothesis has seized upon fevers as her own; and the writings of a succession of medical philosophers abound with long discussions, not so much upon what can be seen and known, as on that

\* Eine so häufige Krankheit auch das Fieber ist und so häufig es von den Aerzten seit den frühesten Zeiten beobachtet und untersucht wurde, so ist man doch bis jetzt noch nicht zu einer übereinstimmenden Ansicht über das Wesen dieser Krankheitsform gelangt, und es sind in dieser Hinsicht zum Theil die widersprechendsten der Meinungen herrschend. Gmelin, Allgemeine Therapie der Krankheiten des Menschen, Tübingen, 1830. P. 187. This observation is corroborated by the following from Baglivi—"Febris si phenomena spectes, reliquis morbis est notior; si constitutionem et causam, omnium ignotissimus,"

which too often, cannot either be seen or known. It is difficult to calculate how far this tendency to groundless conjecture must have set limits to the progress of medical science. It is, no doubt, very pleasing to substitute certainty for uncertainty; but what boots it to assume baseless fiction in the room of truth. Hypotheses, like the algebraic  $x$ , are useful as symbols of the unknown quantity, but that is all. How much better is it to remain in ignorance, than to bolster up our vanity with the imaginary perception merely, of what is true.

It is unnecessary to dilate on the vulgar error of confounding theory with hypothesis. A theory is the act of reasoning on facts. That the theory may be erroneous, or the facts groundless, does not impugn the definition. An hypothesis has not a sufficient number of facts to establish it. If it had, it would cease to be an hypothesis—it would become a theory. Without some facts to support it, it could not even assume the rank of an hypothesis—it would only be a baseless conjecture. Without an accurate employment of words, and some application of the rules of logic, we make wild work when we come to reason on the intricate principles of medical science.\*

Nosological writers and others, arrange fevers, so as to make several divisions. Those into inflammatory, typhoid, and mixed, are among the most common.† The continental au-

\* See the close of Dr. Brown's eighth lecture on the philosophy of the human mind.

† It may, perhaps, gratify the reader to be presented with the division and the definitions adopted by the celebrated Hufeland.

*Febres.* Post horrorem pulsus frequens, calor auctus, lassitudo artuum.

*Febris inflammatoria, synochus.* Horror initio validus, pulsus fortis durus, urina rubra, sitis, caloris et omnium symptomatum harmonia cum pulsu, constantia symptomatum.

*F. nervosa, typhus nervosus.* Sensorii et systematus nervosi affectus primaria, pulsus debilis facile comprimendus inæqualis, interdum tardus, insignis debilitas, disproportion inter pulsum et reliqua symptomata et symptomata ipsa, inconstantia symptomatum, urina variabilis.

*F. adynamica, putrida, typhus contagiosus.* Systema sanguineum magis affectum, prostratio virium maxima, pulsus frequentissimus celerrimus, calor mordax, colliquatio, hæmorrhagiæ, fætor, putrescibilitas, gangrænescentia.

*F. gastrica.* Symptomata febris cum signis gastricis essentialiter juncta. Hufeland, *Conspectus morborum*, Berolini, 1831. P. 5, et seq.



thors indulge in much greater detail, as may be seen by consulting the works of Pinel, Selle, Burserius, Hildenbrand, Frank, and many others. Latterly however, especially in France, the old arrangements are very generally disused, and people are content to arrange the phenomena of fever under one common head, and signalize any differences which may be found to exist, in the description, rather than in the titles of individual cases.\* I confess I think this the better plan. In fact, the divisions became so numerous, that observers were puzzled what class to refer the fevers to, with which they came in contact.† When such distinctions do not exist constantly in nature, it is needless to establish them artificially. There can be no doubt that fever is modified by climate, season, and position—as well as by that unknown something to which Sydenham has given the name of the reigning constitution. I have witnessed a good deal of this disease among the poor in their own houses, and also in an institution, of which I am one of the medical attendants; and I may observe, that for some years I saw numerous cases of fever with petechiæ, while in other years, there were none: and again, during both periods, the varieties of fever, in other respects, would be almost as numerous as the cases themselves.

The very frequent occurrence, and the mortality attendant on this disease above all others, have caused a great deal to be written and said about it; but after all, we must confess with regret, that the sum of our information on the subject, is,

\* See the works of Broussais, Boisseau, Roche, Rayer, Bouillaud, Andral, and others, *passim*.

† An excellent and candid writer well observes—"On peut citer comme un rare modèle de confusion et de savante obscurité, la doctrine de ces fièvres puisée dans la foule immense de *Traité*s généraux de Médecine, ou dans les ouvrages de Nosologie. Leurs descriptions générales et les dénominations qu'elles ont reçues sont également propres à induire en erreur." Pinel, *Nosographie philosophique*, sixième ed. Tome prem. p. 48. Although these observations refer to what the author calls gastric, or bilious fever, they apply to fever in general.

I have never yet, says Gilchrist, been able to follow out some in their almost endless divisions of fevers, nor in the causes they assign for them; as little can I be satisfied with those who would allow of but one general cause in fever. *Essay on nervous fevers*. Edinburgh, Med. Es. and Observat, vol. IV. p. 278.

notwithstanding, exceedingly limited on many important points.\*

The symptoms in fever vary to a great extent, nevertheless there are some, which are common to the majority of cases.† If such uniformity, so far as it goes, did not exist, the disease would no longer be the same. We must always keep in mind, that the form and the amount of the symptoms, greatly depend on the nature and intensity of the exciting cause, the condition of the patient, and the period of the disease.

It would be difficult to say which, the consciousness of the patient, or his exterior as it is observable by others, is first affected. Perhaps it is the former in most cases, and in others, both together. I have seen long residents on the coast of Africa, detect the approach of fever, by a certain expression in the eyes, before the subject himself seemed aware of indisposition.—All the feelings are altered in this singular disease. Sometimes mental, generally corporeal lassitude, precedes the attack. At one time, it will commence with—at another, without rigor; continued fever generally begins without it.‡ I remember waking at midnight in New-York, in the burning glow and hot oppression of a fever, though I had gone to bed in perfect health. The inability to corporeal and mental exertion is very great in the beginning; afterwards, delirium may give a morbid impetus to the action of both mind and body. In some forms of fever, peo-

\* Whytt justly remarks, (Works by his son, Ed. 1768. P. 524.) “The farther we push our inquiries into nature, the more shall we be convinced of our ignorance, and how small a portion is known of the works of the great Creator.” Yet, as Baglivi observes, (Prax. Med. Lug. Bat. 1704. P. 6.) “Necessitas medicinam invenit, experientia perfecit;” and we have no recourse left, but in the result of time and diligent observation.

† Symptom, sign, *σημείον*.—Die symptome sind die unmittelbaren nothwendigen und sinnlichen Erscheinungen der Kranken Organisation, wie sie sich in vegetativer und dynamischer Richtung äussert. Reil, Entwurf einer allgemeinen Pathologie, dritter Band, p. 234. Symptom ist das, wodurch die respective Krankheit unmittelbar und nothwendig erscheinen muss. Id. p. 238.

Symptoma proinde notat quamcunque sensibilem a statu naturali alienationem, quae homini ex praesente morbo ita nascitur, ut tamen ab hoc ipso hujusque causa distingui possit, nec ultra morbum duret. Gaubius, Institutiones pathologicae medicinalis, Leidae Batavorum, 1758, § 86.

‡ Wilson Philips on febrile diseases, vol. I. p. 349.



ple are occasionally capable of considerable exertion. Towards the close of epidemics, (and it was particularly noticed in Ireland,) attacks are sometimes so slight throughout, as not to interrupt any ordinary occupation.\* Very severe fevers however, may begin in this insidiously mild manner.† Marshal Saxe, it is said, wrote his *Reveries* during the course of a fever.‡ A good deal depends in these cases, every thing else alike, on the mental temperament of the person affected.—There are commonly pains in the head, back, and limbs, giddiness, præcordial oppression, anorexia, flushed cheeks, a quick pulse, and a hot dry skin.§ It is related, so anomalous are some cases, that in place of anorexia, there was an increase of appetite. I once experienced, during an attack of fever in Africa, a great desire for food, which continued for a whole day; but such cases are rare, and if not always mortal, as Baglivi asserted, must at least be considered dangerous.

The heat of the skin is in general so much increased, and of such a peculiar character, under the hand of the observer, as to have obtained the name of *calor mordax*. It is sometimes indeed, surprisingly pungent and acute. When the period of excitement exists from the first, the pulse is much quickened.

\* See Barker and Cheyne's account of the Irish epidemic, vol. I. p. 422.

† An epidemic fever of this kind, mild at first, but afterwards malignant and very fatal, is said to have occurred in Copenhagen. Vid. *Acta med. Hafniensis*. An. 1673. *Febres malignæ nuper Hafniæ frequentes*, Caspari Kölichen.

‡ Reil tells us of a peasant who, during the height of a fever, recited Greek verses, of which he had no recollection in health; it appears that he had studied the language in his youth. Vidi, (says Van Swieten,) et ingenii acumen auctum in singulis paroxysmus febris intermittens.—*Commentaria in Boerhaave*, aphor. Tom. II. Sect. 560.

§ Edwards is of opinion that the perspiration, either by evaporation or transudation, can never be entirely suppressed. On the influence of physical agents on life, p. 174.

Sanctorius, among the aphorisms, frequently excellent, which bear his name, remarks—"Prima morborum semina tutius cognoscuntur ex alteratione insolitæ perspirationis, quam ex læsis officiis. *Ars Sanctorii Sanctorii*, De statica medicina, Lug. Bat. 1713.—De ponderat. insensib. perspirat. § I. Aphor. XLII.

In his *Dissertation*, De curatione febrium, Pitcairn discusses this point at large—Quoniam febres, (he observes,) aliique morbi plurimi oriuntur cum à suppressa secretione cuticulari tum à suppressa quavis alia, est que illa aliarum omnium dupla, vel etiam tripla, idcirco suppressio dimidiæ vel tertiæ partis seri perspirabilis febrem generabit æqualem ei, quam generaret aliarum simul omnium suppressio! Pitcairni, *Dissertationes Medicæ*, Rotterdami, 1701, p. 125.

It will also be modified by the presence or absence of inflammation or congestion; by the period of the disease, the age and constitution of the individual; also, by the character of the prevailing epidemic, should fever prove very prevalent. A hard quick pulse generally accompanies inflammation, yet the latter may supervene in the course of fever without this sign; and we know that a hard pulse may arise, in advanced age, from other causes, arterial ossification for instance. The pulse is occasionally slow, and sometimes very rapid.\* I felt it very lately in a young woman, upwards of one hundred and sixty strokes in the minute. She was brought into the hospital under my charge, in an advanced stage of typhoid pneumonia; it is hardly necessary to observe that she died. The pulse is also sometimes, though rarely, slower than natural: Fordyce has seen it so low as forty and fifty beats in the minute. Epistaxis is not unfrequent in the beginning and during the progress of fever. I saw it continue to a considerable extent in one subject—a young man—in whom the fever persisted to the very unusual length of fifty days. It is sometimes said to prove critical. Sanguineous discharges may also occur from other emunctories than the nose, as from the intestinal canal and the fauces. Blood has even been known, as Hux-

\* Fordyce, in his Third Dissertation on fever, very pertinently observes, that, during the first twenty-four hours of continued fever, the pulse seldom rises above one hundred and five in a minute; whereas in an ephamera, or the first paroxysm of an intermittent, it very often mounts to one hundred and twenty or thirty. I have had frequent opportunity of seeing the truth of this remark verified. This writer has witnessed fatal cases of fever, in which the pulse did not rise in frequency at any time.—Falconer's work on the pulse, contains a number of valuable observations. When the pulse in fevers rates 130 in the minute, it is generally, as this writer observes, attended with delirium, fatuity, or insensibility. Vid. p. 48. It should, he justly remarks, be compared, if possible, with the natural beat, which may be very quick, or very slow, p. p. 49, 58. The former is apt to be the case with females. I know a lady whose pulse is habitually above a hundred; and I am acquainted with another person, also a woman, whose pulse can seldom be felt in the wrists at all, except at long intervals. I presume that the pulses of these individuals, who both enjoy average good health, would present anomalies in fever. The writer above named, gives twenty beats as the increase of the evening over the morning pulse in fever. It must be observed also, that the radial artery sometimes runs on the back of the wrist, of which I have met with three or four instances, and of which one is now before me. I knew a case of this kind, in which the practitioner was at first plunged into the utmost alarm upon finding his patient, as he supposed, pulseless. Vid. Falconer on the pulse. Lond. 1796.



ham, Tuomy, and others affirm, to exhale from the skin and finger-tops, but I never saw this.\* Some have found a fætor in the blood drawn from fever patients; I never witnessed this in fever, although I have done so in other diseases. I once, for example, felt a very disagreeable odour in the blood of an elderly high-living female, whom I had ordered to be bled during an attack of pneumonia. The mental condition of the patient varies according to the disposition of the individual; some are tranquil, others apathetic, while a few are anxious to an extreme. It will generally be observed that the poor are less solicitous respecting their situation than the rich; children seldom evince anxiety, as to the future, in any case. These regard the normal action of the mind; but sometimes the disease is characterised by a raging delirium—at others, there is a low typhoid muttering, verging into stupor, or typhomania, as it is called; but in most cases, it runs through its various phases without much disturbance of the mental functions. When fever has been occasioned by contagion, it has been frequently observed that the patient seems as if intoxicated. Many examples of this are related in authors.† The feelings are variously affected, abnormally speaking. The patient sometimes loses all cognizance of his friends, or views them with apparent aversion; on some occasions, he seems to experience a great deal of pain; and on others, he either recovers, or dreams away life, in a kind of pleasing imperfect consciousness, free from all suffering. Such a variety of anomalous features has been described by different authors, that it is not easy to recount them all: Gasc, a writer on typhus, has witnessed catalepsy; others have seen tetanus, and even hydrophobia.‡ The mental manifestations of the individual must vary considerably with the condition of the brain and its membranes, in which there is sometimes in-

\* Tuomy on the principal diseases of Dublin, p. 125.

† Beddoes' Observations, p. 260.

‡ Boisseau, *Pyrétologie physiologique*, p. 360.

Trotter has seen women fall into hysteric fits, and men affected with the globus hystericus—also epileptic paroxysms even, supervene upon the accession of typhus, *Medicina nautica*, p. 214.

flammation, sometimes congestion, and occasionally, anemia.\* I have seen delirium in various instances, from this last source, which must be carefully distinguished from others.† It must also be evident, that the functions of the brain will be modified according to the condition of the blood sent to it, which, as every one is aware, is frequently widely different from the healthy state, in the course of certain fevers. The functions, and eventually the structure of the brain, may be affected by changes in the structure or function of remote parts, as, for instance, in inflammation. It is quite apparent therefore, from all that has been said, that the symptoms must vary exceedingly with the circumstances occurring in the different forms of fever.

It has been stated, that in fever the current of phenomena runs through the nervous, the circulatory, and finally, the secretory and excretory functions and apparatus, seriatim. It is however, exceedingly difficult to affirm any thing with great certainty on this head, for sometimes these three classes of functions appear to be affected consentaneously, and not unfrequently, they follow a different order from that here laid down. Hence, the difficulty of predicting any given series of symptoms.

As the disease advances, the patient becomes more and more exhausted, muscular and mental energy diminishes amazingly; indeed, all the functions languish, and when not suspended, are imperfectly performed. From the great diminution, if not cessation of interstitial deposition, and the continuance of interstitial absorption, the fat disappears from

\* It is worth the reader's while to refer to the description of fever, though somewhat fanciful, by Aretæus, *De causis et signis acutorum morborum*. lib. II. cap. IV. *Περὶ καύσων*. It is remarkable that so acute an observer could suppose, as he seems to do, that patients in the delirium of fever should be able to foresee events, and converse with the departed: *γνώμη μαντιπῆ—μετεξέτεροι δὲ καὶ προσλαλέουσι τῶν κατοικομένων τισί*. There are some interesting observations on this subject, in Sir H. Hallford's *Essays*, in which the author appears to side with the dicta of Aretæus. Vid. p. 81.

† For parallel cases, see Gooch's works, and Pring's pathology; also, Van Swieten, *Commentaria in Boerhaave*, Aphor 712; and Marshall Hall on the effects of loss of blood, and the means of distinguishing between the effects of loss of blood and inflammation, in affections of the heart, brain, and other viscera.



the subcutaneous and intermuscular cellular tissue, and folds of the peritoneum, although in rapid cases, there is seldom time for the consummation of this process.\* Whether from the depraved state of the blood supplying the secretory and excretory organs, or the defectiveness of the process itself, the secretions and excretions become vitiated, in the course of fever, to a great extent. The skin is covered by a clammy stinking sweat, the breath is foul and heavy, the tongue, teeth, and lips, are loaded with a foul and half-putrid sordes † It is not to be supposed that this degeneration of the secretions is confined to those which are visible externally; there is evidence that the bile is altered in its quality and consistence; and the alvine discharges evince the existence of an equal change in the secretions and excretions of the mucous membrane of the intestinal canal. The ancient physicians paid great attention to the state of the urine, which varies very much indeed, in different cases, and at different periods of the disease. It is more foul in gross full-living people, than in those of opposite habits. It is high-coloured at first, but becomes more foul and sparing as the disease advances. With the return of health, it necessarily resumes its natural aspect. The varieties in the urine however, are almost too numerous to be reducible to any general standard.‡ The fæcal discharges are sometimes frequent and thin, at others, costiveness prevails; while occasionally, there is nothing peculiar to be observed in this respect.§ The fæces may be only tinged with blood, or

\* The diminution of substance which some undergo, is quite amazing. Old men and women will survive after the loss of a large proportion of their previous bulk; but this is gradual, whereas, in fever it is rapid. Some patients, as Naumann mentions in a very learned and elaborate production, will even lose half the mass of their bodies. —“Eben so verliert der robuste Körper eines kraftigen Menschen im langwierigen Nervenfieber um mehr als die Hälfte seiner Masse, obwohl sein Grundverhältniss zur Aussenwelt unverändert fort dauert.” *Handbuch der allgemeinen Semiotik*, Berlin, 1826, p. 17. Parry is of opinion, that this may be considered one of the circumstances which contribute to the restoration of health. *Elements of pathology and therapeutics*, p. 447.

† Storch once observed the odour of musk, in a case of fever.

‡ Some writers speak of a urinous fever, because they allege that they discover a urinous smell in the sweat; a very insufficient ground of distinction however, if even real. See the notes by the French translators of Thompson on inflammation. Jourdan and Boisseau, Paris, 1827. p. 35. Also, Andral, *Anat. pathol.* Tome II. Classe IV. § 2.

§ *Alvus plerumque adstricta est; nunquam laxatur.*—Bursarius, *Institut. med. de morbo petechiali*, Tom. IV. § 321.

on the other hand, considerable and even excessive hæmorrhage may exist.\* Serum also, will predominate at one time, and mucus at another. If scybala exist in the intestines, they will of course be voided. It is obvious that in this respect, as in every thing else, much must depend upon the causes already mentioned, along with others not enumerated, such as the condition of the abdominal viscera, and particularly of the mucous membrane of the intestinal canal—whether it is inflamed or not—whether there is merely simple determination of blood—whether there be ulceration—and finally, whether there be lesion of function independent of these organic alterations.

The state of the tongue varies considerably: sometimes however, it is not much affected during the first few days of fever. I have even seen very bad cases, in which the tongue continued comparatively clean nearly throughout; but in the great majority of instances, it is very much discoloured, particularly at the root, and near the sides. It may be yellow, brown, or even black. It may continue comparatively moist all along; but it is mostly dry, and sometimes shrunk towards the bottom of the mouth. On some occasions, it appears as if there were a great cleft down the centre. It not unfrequently happens, that the mouth is in such a state, that the patient can hardly open it, or protrude his tongue when desired.† In the progress of convalescence, it is needless to observe, that the tongue becomes gradually moist and clean. Should a relapse occur, or the patient commit an imprudence in diet, the tongue will again become dry and gritty. If the patient die, it is obvious that the tongue will seldom recover its natural aspect before death,

The eyes sometimes assume a morbid brilliancy, at others, they are suffused and heavy, while their expression is dreamy and languid. Their appearance will often depend a good deal

\* The most violent case of hæmorrhage that I have any where seen recorded, is the following terrible instance from Huxham:—*Id in piissima olim matrona, tristi admodum exemplo, notavi, quæ icterica, et febriculosa, sanguinem profudit vehementer ex naribus, viis urinariis, utero, intestinis, tandemque cum sanguine animam!* *Observat. de ære et morb. epid. Tom. I. Comment. de morb. ictericis.*

† The picture given by Huxham of the worst forms of fever, is vividly correct, and admirably drawn. *Id. Lond. 1752. Tom. I. p. 105.*



upon the condition of the brain, being sometimes nearly blood-shot in affections of this viscus. In young and plethoric persons, there is frequently a good deal of suffusion. Sometimes, the eyes are watery and tearful. I would here again observe, that the intensity of every symptom, must be correlative with the general condition of the frame, along with the nature and amount of the individual morbid functional, and organic changes which obtain in it. Among the seemingly anomalous symptoms which occur during the course of fever, are convulsions; but they are not frequent.\* Sometimes, but rarely, a distressing circumstance occurs, namely—the distention of the bowels with air, or meteorism, as it is called. The retention of urine is more frequent than the suppression, from which it must be carefully distinguished.† In a case which came recently under my charge, I was told, upon inquiry, that no water had been passed on the day of my visit, nor during the preceding one. Upon pressing my hand above the pubis, there were pain and distention. Fomentations and a warm-water enema, enabled the patient to pass his urine without having recourse to the catheter. In a few cases, the bladder after becoming distended with urine, discharges what is continually received by the ureters, in small portions, constituting what the French call, *mixtion par regorgement*. Unless attention be paid, this form of retention may be overlooked or mistaken.

The skin, in the course of fever, is very frequently subject to various eruptions of no very constant character, the flea-bite exanthem, called petechiæ, excepted. They have received various names which it is unnecessary to enumerate. Sometimes, but rarely, they rise above the level of the skin; occasionally, they are spread out in great blotches like measles; while sometimes they are of a light, and at others of a dark

\* I have seen violent convulsions in fever, unattended by any other bad symptom, and which did not retard recovery; in many cases they will occur in very bad forms of this disease. Thus we see that the importance of any given sign, depends upon the pathological condition which has produced it, and the correlative condition of the patient. It has been well observed by Brera, “L’abitudine indebolisce il valore del fenomeno morboso. Vi sono delle persone, che al minimo insulto febbrile sono sorprese dalle convulsioni e dal delirio.” *Prolegomeni clinici*, Padova, 1823, p. 339.

† Stoker’s treatise on fever. Lond. 1815, p. 24.

hue. They may appear at an early or a late period, but generally on the fourth or fifth day of the disease, and are often to be seen in mild, as well as severe cases. It may perhaps, be said that petechiæ, and especially vibices, are found to exist in the severer forms of fever; but there is nothing constant in this; for as I have observed before, years may pass away without the occurrence of petechial fever, while the mortality is neither greater nor less on that account.\* Petechiæ are frequent in epidemic fevers. It is perhaps, worth remarking, that this eruption is not visible on negros; at least I never could discern them in the case of any individuals of this race, whom I have seen affected with fever in Africa, or elsewhere. The same thing is stated by Stendal, as quoted by Rudolphi.† A writer in an old periodical, speaks of a case, in which the eruption was so rife, as to be seen through the nails of the patient.‡ They were very common in the Irish epidemic of 1817.§ The skin sometimes alters in colour, becoming of a leaden hue, from a general tendency to asphyxia, the blood not undergoing its usual changes, owing to the affection of the bronchial lining. Occasionally, as I have said before, it turns quite yellow: I have, however, seen several cases of jaundice, but it is not common in continued fever. Swelling and inflammation, more or less, of the parotid, axillary, and inguinal glands, are not very frequent; those of the parotid are most so in common fever—in plague, the two last. They sometimes supervene upon convalescence, as I have occasionally witnessed.

\* Some writers have described petechial fever as one of the exanthemata: febris peticularis, vel petechizans. I need hardly observe that I look upon this as erroneous. Vid. Burserius, Institut. med. pract. Venet. 1817, Tom. quartus, Cap. X. They are mentioned by Hippocrates, de morb. vulgar. lib. I. ἐξανθήματα μικρὰ; also, lib. II.—ἐγένοντο καὶ ἐν τοῖσι θερνινοῖσι πυρετοῖσι περὶ ζ' καὶ ἡ καὶ δ' τρηχίσματα ἐν τῷ χρωτὶ κεγχρώδεα, τοῖσιν ὑπὸ κωνώπων γινόμενοις μάλιστα ἵκελα ἀναδήγμασιν, οὐ πᾶν κνησμώδεα. ταῦτα διετέλει μέχρι κρίσιος.

† Rudolphi, Grundriss der Physiologie, Berlin, 1821, Erster Band, § 43. Anm. 3.

‡ Unus ex illis tam saturate maculis obsitus deprehensus fuit, ut per ungues transperuerint. Acta erud. Berolinensium, Tom. VI. hist. morbor. Berol. an. 1719, de feb. petechiales, p. 14.

§ See all the writers on the period, and among the rest, Cheyne's report of the Hardwicke fever hospital, in the Dublin hospital reports, Vol. II. p. 3.



All the symptoms become aggravated with the continuance of the disease. Every thing indicates a progressive degeneration, both general and special, of the solids and fluids of the body; indeed, when one contemplates a person in the acme of typhus, it becomes difficult to conceive the possibility of recovery from so general a depravation—the prostration of mind and body seems so extreme and irremediable.

One of the most serious occurrences in the advanced stage of fever, is the formation of sloughs on various parts of the body, but most frequently on the sacrum, owing to prolonged pressure, sometimes combined with a constitutional tendency, together with the almost exhausted vitality of the part. They seem much more contingent on the accompanying weakness, than on the disease itself. I have seen many frightful instances of this kind, and among others, very recently, the case of an old woman, in whom there were not only a large slough on the sacrum, but also mortification of the lobes of both ears. All this poor creature's extremities were dark, cold, and livid, and seemed as if not far short of a state of sphacelus.\* Sometimes, but rarely, a painful swelling of the lower extremities, somewhat resembling the phlegmasia alba dolens of puerperal women, is seen to take place during the progress, or towards the termination of fever; I cannot recol-

\* There is an account in a recent number of Hufeland's Journal, April, 1834, of a curious gangrenous affection of the nose in epidemic typhus. The narration is by Mauthner, and is thus headed: "Bemerkungen über das typhöse Fieber mit Nasenbrand (vulgo Blaunase) welches im Winter 1831-2 unter dem Militär in Gallizien epidemisch geherrscht hat." The writer shows, by numerous authorities, that he has not been singular in the observation of this affection; indeed, it has been noticed by various writers—certainly however, by few as occurring epidemically. One of the most remarkable circumstances attending this singular complication, was the fact of its almost invariably proving the forerunner of certain death, notwithstanding the efforts of the attendants, and the abatement of the ordinary symptoms of the disease. It was also observed, when the blue-nose, as the soldiers called this form of gangrene, had set in, the patient was perfectly conscious of his situation, up to the period of his death, which generally occurred seven days after, and on the thirteenth of the malady. Brera speaks of a gangrenous ephemera, which is also mentioned by Burserius (Op. cit. Tom. II. § 229,) and others; but I am not aware of any English author that has spoken of it. Brera's words are, "La particolare nostra osservazione ci fece vedere, che di tal indole è una febbre, che dapprincipio si svolge coi caratteri dell' effimera semplice, e termina colla gangrena presso che universale sulla superficie del corpo." *Prolegomeni clinici*, p. 790.

lect having seen an instance of this. It has been well described by Tweedie, Graves, and Stokes.\*

All the senses are depraved in the progress of this disorder. Vision becomes dim and confused, and the patient is sometimes plagued with spectral appearances. The hearing becomes so dull, that the patient hardly attends to the loudest noises; it is also probable that he is sometimes assailed with imaginary sounds. As to the internal senses, we have great reason to believe that they undergo an equal depravation, though the evidence for the change is less distinct. That muscular affection called *subsultus tendinum*, makes its appearance in the extreme stages of fever, also tossing of the hands, and picking of the bed-clothes. Death however, may ensue without any of these occurrences. All these morbid phenomena undergo a very great variety according to circumstances; as, for example, when there is inflammation in the brain, or merely congestion—when there is pneumonia or bronchitis—and when there is any affection of the viscera of the abdomen, particularly of the mucous membrane of the intestinal canal. Sometimes the skin is dry during the whole course of fever—at others, there is a constant rank-smelling perspiration. Towards convalescence, in such cases, this last alters its character, and the harsh dry skin, generally becomes bathed with moisture more or less profuse.

The exacerbations are more distinctly marked in some cases than in others. Most subjects are almost invariably worse during the night, and suffer least in the morning; in some cases, towards the close of the disease, the remission is so great, as almost to amount to apyrexia. When the disease has not a fatal termination, there is a gradual diminution of all the morbid phenomena; sometimes however, the change for the better is very rapid. In ordinary cases, the skin loses its harshness, and assumes the softness and moisture customary in health; sometimes the epidermis peels off; the eye becomes clear, and yields its wonted expression; the pains leave

\* See a paper on this affection, by Dr. Tweedie, in the *Ed. med. and surg. Journ.* vol. XXX. p. 258; also one by Drs. Stokes and Graves, in the 5th vol. of the *Dub. hosp. rep.*; also, a further notice in Graves' *Clinical lectures*, as reported in the *Lond. med. and surg. Journal*, vol. II. lect. VI.



the head, back, and limbs; the pulse grows slow and natural; the features become calm and regular, though pale; the blood is once more properly arterialized; all the secretions by degrees approach their ordinary condition; the general weakness becomes daily less; and finally, the mental functions are discharged with tranquillity and correctness.

Fever will occasionally remove various chronic diseases, but it may also superinduce others.\* It sometimes leaves behind, chronic affections of the different viscera, dropsy, and other maladies. I have seen phthisis more than once consequent upon it, tubercles having, in all probability, previously existed.

When I here speak of fever, it will be understood, that I do not include the fever attendant upon the different phlegmasiæ, or the febrile exanthemata, and consequently, that I do not consider inflammation as the necessary precursor of this disease, however frequently it may be complicated with it as a consequent. The febrile irritation arising in that form of meningitis called hydrocephalus, also the hectic remittent which attends phthisis and chronic inflammation of the peritoneum, and mucous membrane of the intestinal canal, puerperal fever—or that specific inflammation, as it appears to be, of the peritoneum, and perhaps the uterus, in child-bed women—and the febrile exanthemata, have been so long, and in my opinion, so justly separated from ordinary fever, that it is almost unnecessary to observe, that I shall not consider them

\* The ancient writers, and some among the moderns, abound with various examples of the utility of fevers in this way; and, as I have remarked elsewhere, Pujol has devoted a dissertation to the subject. I have seen an individual wholly freed from a severe rheumatism by an attack of fever; and I lately witnessed a young man, to all appearance, completely liberated from phthisis. Both were seized in the hospital, where they were under my care—Burserius observes: “Quos enim morbos medicamenta non sanant, interdum curat febris.—Febri quandoque curantur apoplexiæ, paralyses, epilepsiæ, convulsiones, arthritides, et obstructions.” Institut. med. pract. de febre generatim, § 1. But as this excellent author and Werlhof (de limitandis febris laudibus,) have well remarked,—writers have sometimes gone so far in their praises of the salubrious powers of fever, as to have exceeded the bounds of truth—“ut veri etiam terminos excederent.”—Zacutus Lusitanus fairly argues the question—if an apoplexy, says he, is cured by a natural fever, why should not an artificial one succeed as well? Nam si apoplecticus sanatur superveniente febre, cur illâ excitata medicamentorum ope, non reviviscet? Medicorum principum historia, p. 258.

here. Although there seem strong grounds for looking upon plague as a kind of typhus modified by climate, it is nevertheless a disease of such importance, as to demand a separate consideration. The anomalies of fever, such as the jail, hospital, transport and camp fevers, do not however, require separate heads. We are hardly able, from the insufficient data left us, to determine the exact character of the sweating fever, much less that of the hosts of epidemic disorders which, independent of the so-called plague, have swept through Europe and the world, at different periods, under a great variety of names, such as the black death, the blue death, and so on.\* To describe the epidemic fevers which have ravaged the same or different countries in succeeding periods, would require a detail incompatible with the limits of this work; the task however, has been performed by writers of acknowledged abilities.†

The duration of fever varies considerably. It may be said with propriety, that it can persist from one day to sixty, and even longer. Certain it is, that these two extremes less commonly present themselves than an intermediate period. From the frequent limitation of fever to fourteen days, it is sometimes called the fourteen-day fever. I have more than once been attacked with fever lasting a single day, (which might however, have been the remnant of an ague,) of which the features were as distinctly marked, and as intense, as it was possible for them to be. The same remark may be made of the fever accompanying or constituting the influenza. During the last time in which it prevailed, in 1833, I saw many robust persons attacked with it, who presented the brown tongue, hot skin, suffused eyes, accelerated pulse, the anorexia, and the bodily and mental prostration, usual in continued fever, from which it was impossible *à priori* to distinguish it, unless from the probability of the case. Febrile attacks of two, three, and four days' duration, are not unusual,

\* Vid. Hecker, *Der schwarze Tod im 14 ten Jahrhundert*, Berlin, 1832, or Babbington's translation.

† See the works of Sarcone, Ræderer and Wagler, Sims, Webster, Foderé, Schnurrer, Ozanam, and very many others.

Pliny long ago observed, that epidemics proceeded from east to west; "*Qua in re observatum, a meridianis partibus ad occasum solis pestilentiam semper ire.*" *Hist. nat. Lib. VII. Cap. II.* The recent cholera has furnished another example of this general law.



either terminating spontaneously at the expiration of this period, or perhaps more frequently by the intervention of art. One of the hospital nurses, a widow, timid, a new-comer, and grieving after her children, but robust and plethoric, began to exhibit the usual marks of fever with high excitement. Moderate venesection, an emetic, and a smart purgative, entirely freed her from the complaint on the fourth day. Six weeks after, she again grew ill; the same means however, no longer sufficed to strangle the disease, which ran its ordinary course, but without the occurrence of any dangerous feature. I have seen more than once, in Africa, an emetic stem—"faire avorter," as our French neighbours say, an incipient fever. A young man was brought, a few days since, into the hospital, on the fifth day of fever. He had a strong bounding pulse, flushed cheeks, a hot skin, and pain in his head—in a word, he was in the first stage of fever, with high excitement, or what Cullen would call synocha. I ordered twelve ounces of blood to be taken by a large orifice from the arm, and a purgative: next morning, there was not a trace of fever, nor did he afterwards relapse.\* Low diet and gentle aperients were continued for a few days after, as a measure of precaution. But in stating these things, I only mention facts which are known to every practitioner conversant with this disease. The ordinary duration of fever, at least in these climates, is from fifteen, to seventeen or twenty-one days; certainly, these periods are more common than any other. Fevers arising from contagion, are frequently observed to be of shorter duration than others, especially towards the close of epidemics. It is quite obvious that this cannot always be the case; indeed it is frequently very difficult to know when a fever arises from this source, and when it does not. I am inclined to side with O'Brian, who is of opinion, that all continued fevers may become contagious under certain circumstances.† Certainly, if men not affected with fever, can, under certain circumstances, generate the fever-poison, it becomes *à fortiori*, still more probable, that the fevers of persons in dirty, confined localities, will evince a contagious character, which they would not

\* A case in many respects similar, and in which the fever was removed by bleeding in the foot, is mentioned by Pinel, *Médecine clinique*, p. 20.

† *Transact. of the Coll. of Physicians in Ireland*, vol. III. p. 471.

otherwise assume. It was a matter of common observation during the close of the continuance of epidemic fever in 1817, in Ireland, that five-day fevers became very common, though they were not so at earlier periods.\* The duration of fevers is a phenomenon which we may observe, but can hardly reason upon. It is certain nevertheless, whatever be the absolute cause of its specific duration independent of modifying circumstances, that these possess considerable influence.

It may be established as a general rule, that fever, when once it is fully formed, cannot be arrested by human agency; but we have much reason to believe that diet, air, medicine, the state of the mind and body at the period of attack—the climate, the season, the source and the amount of the febrile poison, have all a greater or less share in determining the persistence and duration of this malady.† To these collateral circumstances also, may perhaps be attributed the form of fever, and the relative duration of its principal periods—As, for example, whether the fever shall be attended with great arterial and general excitement throughout, or a synocha—or with little or no excitement from the first, constituting all the various forms of what have been called typhoid, nervous, gastric, congestive, and petechial fevers, the fever of hospitals, camps, and prisons, and the common epidemic fever arising from cold, poverty, wretchedness, and starvation—or finally, the mixed, and under ordinary circumstances, the very common form, or what people call synochus, in which the period of excitement, after lasting a greater or less time, terminates in one of stupor, debility and universal prostration, more or less intense.‡ I conceive that it is not correct to affirm,

\* Barker and Cheyne, *op. cit.* vol I. p. 428.

† Pujol has written a dissertation, “*Sur l’impossibilité de suspendre, par les remèdes, le cours des maladies aiguës;*” among these he very properly includes fever. Vid. *Œuvres de médecine pratique*, Tome troisième, p. 231.

‡ Reil says, speaking of the symptoms however: “*Synocha geht in Typhus und dieser in Lähmung über.*” *Entwurf einer allgemeinen pathologie*, Halle, 1815, dritter Band, p. 235—The complacency with which some of the older writers defined this form of fever, and accounted for its origin, are amusing enough. *Febres*, (says Dodonæus, *quæ ex corruptione humorum proveniunt, putridæ appellantur, propterea quod ex corruptis, et a natura sua permutatis humoribus, origine habeant.* Dodonæi, *Praxin artis med.* Amstelodami, 1591, cap. II. de feb. putridis. Another speaks thus: “*Tertiô vel est humorum in vasis, undè febres putridæ,*” etc. Liddelio, *Ars medica*, Hamburgi, 1617. De morborum causis in specie, cap: III.



as different writers do, that the fever characterised by high excitement throughout its course, and which, after Cullen and his predecessors, is often called synocha, does not occur in this country. In fact I have often seen it, especially in children, and young persons generally.\* Certainly the fever occurring within the tropics, in robust European subjects, is sometimes marked by tremendous excitement at the onset; but so far as my experience goes, this frequently subsides before the complaint is subdued, into a state of extreme prostration. It is just seventeen years since I went into a hut, on an island called Tombo, in the river Sierraleone, to see a ship-carpenter lying ill of fever. I think he had been about a week ill, but he was lying in such a state of stupor and debility, that could he have been suddenly transported to the London or any other British fever hospital, his would assuredly have been pronounced a case of typhus—of course erroneously; but such, I am of opinion, would have been the *prima facie* impression. I had under my charge, not long since, a young woman, about sixteen or seventeen. Her indisposition, which lasted fifteen days, was treated entirely with active antiphlogistics; and from first to last, there was no symptom that was not indicative of high febrile excitement. I do not know how many children and adults I have seen affected in the same way. A mixed form however, in which excitement and subsequently depression prevail, is the most common of all. During epidemic fever, and occasionally at other periods, cases occur, in which the prostration sets in from the very beginning, and of so intense a character, that the patient seems labouring under the effects of a dose of poison—as is in effect, in one sense, the case. In ordinary instances, it will be recollected, that the excitement, where it exists at all, soon subsides, especially in the weak and debilitated; and it is a matter of common observation, that these are precisely the description of persons, who are the most common subjects of epidemic fever. From what has been

\* Some writers cut the matter short, by affirming that synocha is merely another name for the fever attendant on inflammation. See Allan's system of pathological and operative surgery, vol. I. p. 8.

here said, it will be obvious, that the continuance of the first period, or that of excitement, is very uncertain. In the fever of this country, most commonly occurring, it may perhaps be affirmed, that seven days is the ordinary standard; an equal and sometimes a double space of time may be assigned to the after period, or that of prostration. As to the duration of convalescence, it is, as Percival observes, very uncertain. I need hardly perhaps again remark, that all these are things of relative occurrence.

The question of crises has been a subject of discussion for centuries. Certain phenomena occurring during the course of fever on certain days, and supposed to be connected in most cases, with the cessation or the aggravation of the complaint, have received this name. But the occurrence of these supposed periods, and the connexion of any given phenomena with the termination of disease, whether it be fatal or otherwise, are matters of too much uncertainty to sanction such a doctrine, which is now nearly, if not wholly, exploded.\* Every one who has had much opportunity of observing fever, must know, that an alteration, sometimes for the better and sometimes for the worse, will frequently take place, without being attended with any observable concurring evacuation, or other so-called critical circumstance: and even when any such do happen, it is in most cases, difficult or impossible to say whether they are cause or consequence, of the change that has ensued†—Though it is not within the compass of human power, to imitate these favourable efforts of nature artificially, it must be admitted, that certain occurrences, whether produced by art or nature, may be beneficial or the reverse, and as such, must be minutely attended to. Although we cannot attach to the epithet critical, the ancient import of the term, it is allowable enough to employ it, significant of any given phenomenon, occasionally associated in nature with a change for the better

\* Transact. of the Coll. of Phys. in Ireland, vol. I. p. 301.

† Noi abbiamo di già osservato, che le malattie acute percorrono per lo più certi determinati stadij e periodi in quasi determinati giorni, e che in uno di questi, che dicesi critico, sogliono terminare in salute, o in un'altra malattia, o in morte. Si è del pari rimarcato, che lo scioglimento dei morbi rimane il più delle volte operato dalla comparsa d'una o più evacuazioni critiche. Brera, Prologomeni clinice, p. 797.



or worse, in fever.\* Of all these perhaps, a sweat, as I have said before, is the most frequent in a beneficial point of view. Occasionally, a slight diarrhœa takes place, which is in some cases a kind of substitute for the rest: but independent of these, many others may occur—such as a hæmorrhagic discharge, a salivation, an abundant expectoration of mucus, a purulent deposit, an inflammation of the parotid gland, a lateritious or brick-dust sediment from the urine, and many others needless to mention. Some of these phenomena, as well as others to be mentioned hereafter, may be associated with the aggravation of the disease, and the approach of death—Having already spoken of the absolute and comparative duration of fever and its different periods, it is quite unnecessary to enter into any observations respecting the days supposed to be critical, since, in my opinion, there is no evidence to shew that the changes supposed to be of this nature, happen on the days called critical, more than upon the intermediate ones. The convalescent stage may be prolonged for a very considerable period. The brevity of its duration, is generally in the inverse ratio of the previous debility and prostration of the patient, the intensity and complication of the disease, as well as the various morbid relics contingent on it.

The existence of fever must have been almost coeval with that of mankind.† I should think however, that epidemic fevers, notwithstanding the influence of soil and atmosphere, also require a certain period and condition of society, to enable them to appear.‡ It is melancholy to reflect upon the details

\* Different writers, particularly Mead, and more recently Balfour, affirm that the revolutions of the moon are in some way connected with the crises of fever. Are we warranted in supposing that the sun or moon has a greater share in the event than the planets at large, or in fine, than any of the heavenly bodies? Is not such an hypothesis in fact, a remnant of the supposed science of astrology, once so generally entertained? Vid. Balfour on the influence of the moon in fevers, Edinburgh, 1785, p. p. 13, 59.

† Post ignem ætheria domo

Subductum, macies et nova febrium

Terris incubuit cohors. Horat. carm. Ode III.

As Andral observes, (Anat. pathol. Tome II., Classe IV. § 2,) fever must have been one of the first terms in medicine; it is however, as he also remarks, a purely metaphysical one.

‡ After all, we must admit with Parry, that in our present state of knowledge, it is impossible to ascertain, on all occasions, the cause of fever. Elements of pathology and therapeutics, p. 445.

furnished by numerous historians, of the dreadful ravages so frequently committed by this formidable class of disorders, from which no nation or time appears to have escaped.\* We cannot always indeed, ascertain whether they were fevers or not; doubtless, if not always, they must often have been so—There is something appalling in the aspect of epidemic disorders. The rapidity of their invasion, the havoc which accompanies them, and the speedy and extensive dissolution of earthly ties, which they occasion, terrify and overwhelm the imagination.† Yet to the cool reflecting mind, they are perhaps less dreadful than some other diseases, which yearly sweep away their thousands and hundreds of thousands of victims, unmarked by the community at large, and only known to the philosophical observer, or the immediate connexions of the deceased.

It has long been recognized, that fever arises from two great sources, which I think may be conveniently denominated occasional and epidemic. The occasional causes are numerous—the epidemic ones, on the contrary, few; some of the former, as contagion, are included in the latter.‡

\* In every part of the world where records of physie have been preserved, putrid fevers, or those attended with putrescency, have been distinguished by their violence and fatality, as well as by the uniformity of those symptoms which they almost universally exhibit. Lettsom's medical memoirs, § 1. Observations on fevers.

† As in the case of most of the ancient epidemic outbreaks, it is difficult to say what the disease was, which is described in the eloquent pages of Thucydides; some suppose it was the small-pox, others the plague—perhaps it was merely what we now call typhus fever. The desolation and distress which accompanied it, are however, faithfully portrayed; “οὐ μέντοι τοσούτος γε λοιμὸς, οὐδὲ φθορὰ οὕτως ἀνθρώπων οὐδαμοῦ ἐμνημονεύετο γενέσθαι. οὔτε γὰρ ἰατροὶ ἤρχουν τοπρῶτον θραπέοντες ἀγνοία, ἀλλ’ αὐτοὶ μάλιστα ἐθνησκον ὅσω καὶ μάλιστα προσήεσαν, οὔτε ἄλλη ἀνθρωπεία τέχνη οὐδεμία.” De Bello Peloponnesiaco, Oxon, 1809—lib. II. A little further on, this admirable historian exemplifies the common tendency of epidemic disorders to involve all others; “καὶ ἄλλο παρελύπει κατ’ ἐκείνον τὸν χρόνον οὐδὲν τῶν εἰωθότων ὃ δὲ καὶ γένοιτο, ἐς τοῦτο ἐτελευτα.”—Lucretius expresses in two lines, the overwhelming severity displayed by this direful pestilence, and the miserable inutility of medicine :

Nec requies erat ulla mali: defessa jacebant  
Corpora: mussabat tacito medicina timore.

Lucretii Cari, De rerum natura. lib. VI.

‡ The leading destructive agents, says Foderé, Med. leg. Tome V. p. 341, which operate in the production of fever, are cold, moisture, marsh miasms, and the



Fever often arises, it is difficult to determine how. Exposure to cold, over-exertion, sudden alternations of temperature, excesses in eating and drinking, and even external injuries, as blows, often produce the disease; but the operation of cold and wet, relatively speaking with regard to the condition of the frame, appears to me to be one of the most frequent occasional causes. In warm climates, a slight circumstance will bring on fever. I have been attacked with it on the coast of Africa, from an accidental stroke on the head—I saw a man there, contract a severe fit, from falling into a river from a boat, with his clothes on, and having afterwards to swim ashore. Predisposition, or a certain state of the body, rendering the frame more liable, counts for a great deal. It is not always to be ascertained what this predisposition consists in; but it is certain that the operation of fear, cold, want, damp, and depressing agents generally, pave the way for the reception of fever by contagion, as well as other causes. Long-continued exertion in riding, running, cricket, and fives-play, especially under a hot sun, not unfrequently produces fever. Excessive mental emotion has been known to occasion it.\* In these cases, it is obvious, that the centres of circulation have been long and violently excited. Yet something even here, must predispose in the individual, since numbers of persons daily encounter similar conditional causes, without a like result taking place: doubtless the want of being habituated to violent and long-continued exertion, creates a greater proneness to the injurious consequences which it occasionally entails. In the beginning of harvest, people sometimes take fever who have not been accustomed to work in the fields; in like manner, recruits on long marches, and pedestrians generally.† It is no unusual thing for children to contract fever

crowding of numbers together, (*l'encombrement*.) This author justly remarks, that as typhus must begin without contagion, it is impossible for the latter to be a universal agent in the production of fever.

\* Anger, for example, has been said to prove an occasional source of fever; some writers admit that it is so without hesitation. *Si verò ex ira, aut exercitatione nimia, aut longa mora in sole, quis febricitat, etc.* Vallesii *Methodus medendi*, Parisiis, 1666, cap. VI.

† The son and heir of a noble Earl lost his life, to the great regret of all who knew him, owing to a fever occasioned by the imprudent exertion

after a long holiday's sport. Yet the constitution has a good deal of the *vis resiliendi* in it, and when in proper working condition, is not easily knocked up by any ordinary cause. Some, as Puchelt, are of opinion, that the accumulation of sordid *fœces* in the intestinal canal, may become an exciting cause of fever. I do not give an opinion on the frequency of this alleged cause, but the circumstance in question, must often occur without any such result.\* In young, robust, and plethoric individuals, fevers arising from the preceding sources, and indeed most others, are characterized by very high excitement, especially at the beginning; in debilitated persons, the excitement is apt to be less, and the stage of collapse more intense, as well as of earlier occurrence: in very many, there seems little excitement or depression throughout. I need hardly declare here, more formally, that I do not look upon fever in any case, as the mere result of abstracted or added stimulus. Doubtless the property of excitability, which has formed so large a theme for the observations of Brown, Darwin, Girtanner, and others, enters as one of the invariable elements of life, both in health and disease;† and it is surely as great an error to deny it, as to make it the exclusive ground-work of a theory of pathology or physiology.‡ But there are difficulties attending these sub-

of riding during a warm day, eighty miles before dinner—forty from, and forty back, to Abbeville in France.

\* His words are;—"ist angehäufter Koth die Ursache des Fiebers, so heisst die Krankheit mit Recht *febris stercoralis*."—*System der Medicin im Umrisse dargestellt*, Heidelberg, 1829, Zweiter Band, p. 712—An American writer, in the third volume of the New-York medical and surgical Journal, says, that enormous collections of *fœces* in the large intestines, characterize the remittent fevers of the State of Michigan. I should feel inclined to look upon this complication in the light of an occasional occurrence, any thing but essential to the existence of the disease. It is well known that some epidemics on the Continent, have been marked by the presence of large quantities of worms, and that many medical men, and the people generally, look upon worms as a cause of fever—worm-fever, *febris verminosa*; but it is not likely in either case, that such occurrences operate in the direct line of cause and effect, though they may have a predisposing, or collateral influence in rendering the individuals thus circumstanced, more susceptible of fever from the ordinary sources.

† Brunonis *Elementa med.* Ed. 1784. Darwin's *Zoonomia*, Dublin 1794; both *passim*.

‡ It is remarkable enough, how fully Cullen himself admits this doctrine; "Our system (says he) is not a mere automaton, nor is supported in its duration by any powers, whether of mind or body, subsisting within itself; it appears that we have constant need of some external assistance."—*Works by Thompson*, vol. I. p. 600.



jects, which perhaps, will never be fully cleared up. Excessive and long-continued stimulation may lead to some of the forms of the very complicated functional and organic derangement, called fever; but there is no evidence that mere debility will do so, though unquestionably it paves the way, and most effectually too, for the operation of other morbid agents. It is quite certain, that besides these accidental causes of fever as it were, there are others which may be styled specific, such as the operation of a peculiar poison, which may or may not be connected with contagion. Is the fever then, let us ask, which arises from this specific source, essentially different from the other forms which do not acknowledge it for their origin? I should be inclined to think not—I ground my conclusion upon the fact, that we frequently see the so-called typhoid symptoms, appear in fevers confessedly not springing from contagion—at the close of many inflammations, in some of the febrile exanthemata, in puerperal fever, in hospital gangrene—and after the long-continued retention of the placenta. Yet again, why are not all fevers contagious? To this question I can make no reply, except that all fevers may perhaps become so under certain conditions. We see, in fact, that some fevers, under particular circumstances, are to all appearance, highly contagious, while others are not at all so.\*

Aber nur die Fortdauer, nicht der Ursprung des Lebens ist das produkt einer wechselwirkung zwischen einer erregbaren Substanz und äussern erregenden Potenzen. Treviranus Biologie, Vierter Band, Göttingen, 1814, p. 626. Die Bedingungen des Lebens, sind theils innere, theils äussere, die innern bestechen in dem angemessenen Verhältniss jedes einzelnen Theils zum ganzen übrigen Organismus, und des letztern zur äussern Welt, id. p. 639. Für jede automatische Bewegung lässt sich ein äusseres Ursache angeben wodurch sie veranlasst wird. Id. Fünfter Band, p. 278.

Das Leben des Menschen ist nämlich nicht allein und ausschliessend in dem Bau, der Mischung und den Kräften seines Körpers begründet sondern es ist auch von äusseren Einflüssen, einem gewissen Grade von Wärme, dem Lichte, der atmosphärischen Luft, dem Wasser und den Nahrungsmitteln abhängig. u, s, w. Tiedemann, Physiologie des Menschen, Darmstadt, 1830, Erster Band, § 11.

An admirable summary by the way, of the defects and the merits of the Brunonian theory, is given by Tiedemann, id. § 532; but as it is too long to quote, I beg to refer the reader to it. See also Rudolphi, Grundriss der Physiologie, Berlin, 1821, Erster Band, § 213.

\* Andral, Clin. med. Tome III. p. 449, and Mills, in his Comparative view of fever, p. 111, both deny the contagion of fever. The former author observes; “Une fois développée, la fièvre typhoïde est elle susceptible de se propager par contagion?”

Yet it is quite evident, that fevers considered contagious, must have sources independent of contagion—nay, that the fever-poison may be generated and communicated by individuals particularly situated, while they themselves remain free from fever. If the power of communicating itself is to be considered an adequate generic distinction, I am content that it should be so; but let us however, not forget the influence of collateral circumstances; that free ventilation or the reverse, may make a fever contagious or otherwise; and that an accumulation of persons, affected with fever, in a narrow unventilated space, will not only suffice to produce a poisonous miasm or fomes, capable of reproducing fever, but that individuals similarly circumstanced as to air and space, yet free from fever, will also often acquire a similar power.\* Sometimes this poison is so concentrated, as, combined with other causes, to destroy the persons who produce it; witness the case of the black-hole at Calcutta: Mr. Howel and the small remnant of his companions who escaped this noted and horrible incarceration, were said to have been afterwards attacked with a fever analogous to typhus. In other cases, the persons who produce the poison, remain unaffected with fever, though so highly tainted as to occasion the disease in all who come into any proximity with them: this was the case in the noted black assize at Oxford, in August, 1577, after which, according to Stow, five hundred people sickened and died; also in the famous Old Bailey session, May, 1750, in which a number of persons who were exposed to a current of wind passing over the prisoners, contracted fatal typhus—

Dans ces derniers temps, le Docteur Bretonneau, M. Gendron et quelques autres médecins ont soutenu que la dothinerie était une affection éminemment contagieuse : nous ne nions pas les faits cités par ces auteurs ; mais ce que nous avançons avec assurance, c'est que jamais à Paris, soit dans les hôpitaux, soit hors les hôpitaux, nous n'avons reconnu à cette maladie le moindre caractère contagieux."

\* Piorry has written an essay on the occasional causes of fever—or typhoid enteritis, as he also styles it, in which he enlarges very ably on the great frequency with which typhus is caused in Paris, in persons who inhabit small, ill-ventilated apartments—A good description of fever, as it occurs in the crowded between-decks of ships, is given in Jackson's sketch of the history and cure of contagious fever, p. 62, et seq. Some of the cases which he mentions were so virulent, that—"death took place not unfrequently within forty-eight hours from the time of attack."



not to mention other similar instances. Examples in abundance, may be collected from Foderé and other authors, of soldiers in retreat, generating the fever-poison, and communicating its deadly influence to others, while they remained free themselves.\* It affords a strong proof of the real or apparent difficulties attending the investigation of this subject, when we find such a man as Armstrong, at one time advocating the communicability of typhus, and at another, as strongly affirming the contrary. Under ordinary circumstances, we see every sort of fever occurring; fever with much excitement, fever with little excitement, and mixed fever; but in epidemic periods, fever with comparatively little excitement, or the so-called typhus, almost exclusively prevails. This is so, because the sources of epidemic fever are most commonly accidental or artificial—such as the failure of crops from unusually cold wet seasons, general poverty and want of employment, deficient clothing and fuel, combined with the migration of beggars, and accumulated domestic wretchedness and privation.† In such a state of things, fever spreads with marvellous rapidity; it is generally indeed, alive at all times, in thousands of localities, each of which

\* Foderé, med. leg. Tome V. p. 351.

† The way by which bad food, ill-ripened fruits of the earth, &c. do often produce malignant and pestilential diseases, is not very different from that, by which we have observed unwholesome airs to be the cause of the like effects. For the juices with which those supply the blood, being corrupted, must necessarily make a fluid neither fit for nutrition nor the animal secretions. It is upon this account, that a famine is very often succeeded by a pestilence. And this calamity generally begins among the poorer sort of people, whose diet, to be sure, is the worst. Mead's Mechanical account of poisons, 5th ed. Lond. 1756, p. 305.

See Milner Barry's Report of the fever epidemic in Cork in 1817, in which he forcibly describes the deficient diet, misery, and wretchedness prevailing among the poorer inhabitants. It is painful to peruse the account furnished by Dr. Graves of the fever in Galway and the West of Ireland, in 1824. One can hardly believe that such deplorable destitution could exist in any civilized country in the nineteenth century. The constitution of society must be sadly at fault, when people are perishing by thousands for the want of bread, while at the same time, corn and cattle exist in profusion. It is stated in this report, that even the commonest weeds, both of the fields, and the sea-shore, were vainly used to appease the cravings of hunger. Many persons from the inland districts perished of famine, shortly after they had arrived in Galway to partake of the partial distribution of food there, just as the Indians in our settlements are reported to do after the failure of their rice-crop. Vid. Transact. of the Coll. of Physicians in Ireland, vol. IV. p. 408.

at such periods, proves a focus of dissemination.\* During these—terror, misery, and exhaustion of mind and body, co-operate, every susceptible individual is eventually seized, and thousands perish—at length, from former attacks and other causes, the number of persons capable of being affected, becomes very few; the links of communication, as regard the disease, are broken; more favourable circumstances arise; and the epidemic is subdued, either to arise again or not, as the position of things shall afterwards determine. As the poor and miserable are the usual subjects of fever, so on the other hand, the rich and affluent are much less frequently attacked; hence, the malady and the mortality, are in a manner confined to the destitute working classes.† The poor live in wretched narrow cells, loaded with dirt, and debarred of light and air—the rich dwell in lofty well-appointed mansions, scrupulously clean, airy, and light: the clothes worn by the poor man and his family, are loaded with impurities; the very air they breathe, is rank with accumulated exhalations from their bodies, while the food they eat is spare and innutritious—the rich, on the contrary, enjoy frequent changes of garments, and every means of keeping themselves free from the sordes, which unchecked, gather so rapidly on the human frame; they respire a pure fresh atmosphere when they please, and they possess an abundant supply of succulent food—the rich, in a word, enjoy the luxuries of society, the refinements of life, and the command of a multitude of pleasurable emotions and sensations, for the most part wholly inaccessible to the poor. It is indeed obvious, and confirmed by the fact, that such a difference of circumstances ought to create, and in effect does create, a vast difference in the receptivity of disease. The position of no portion of mankind however, as society is now constituted, is so free from artificial evils as it might be.‡ Even the rich themselves, and middle classes generally, from their abuse of

\* It was the opinion of Dr. Percival, and one which my own experience fully enables me to coincide in, that typhus exists the whole year round, at least in Ireland. *Id.* vol. I. p. 263.

† This has been abundantly proved upon evidence in the recent Irish epidemic.

‡ Il est très douteux, says the enlightened and philanthropic Foderé, qu' aucun habitant de l' Europe civilisée soit aujourd' hui reellement heureux. *Traité de médecine légale*, Tome I. p. 179.



what are usually considered the good things of life, possess constitutions too frequently incapable, of withstanding the shock of so violent a disease as fever.\* Principally however, from the habitual over-employment of stimuli, the mortality among them when they do contract fever, is double or treble what it is among the poor.† Excessive bodily and

\* Can we adopt Junker's opinion, in its full extent, that when fever is fatal, it depends on the state of the individual, or the severity of the complications? If so, I apprehend that we might pass a similar dictum with respect to most diseases.

† The mortality, absolute and relative, attending different maladies, and fever in particular, is a highly important subject of consideration. Though considerable masses of scattered materials exist, they are, in some respects, insufficient; nor have their contents as yet, such as they are, been submitted to a sufficiently satisfactory generalization. Vid. Bisset Hawkins' Medical statistics. Fever-hospitals are generally supposed to lessen the mortality of the disease; but it has been lately supposed, by various persons, that general hospitals are in some respects preferable: It is difficult to say what value we are to repose on the tables of mortality of different hospitals, even when drawn up with care, and properly authenticated. Very many circumstances must be taken into account, the locality, the character and amount of the population, the size of the hospital, the mode of treatment, and the period of admission; it is likewise of importance to know, whether fevers have been carefully separated from idiopathic inflammatory diseases, and the febrile exanthemata. It is also quite necessary, so far as it is possible, to separate the fevers which take place epidemically, from those occurring at ordinary periods—the comparative mortality, except under peculiar circumstances, being much less in the first. Though fatal cases are frequent at the onset, yet it is fully established, as Barker and Cheyne have remarked, that during the epidemic prevalence of fever, the average mortality little exceeds one-half of the ordinary rate. Vid. An account of the fever lately epidemical, vol. I. Introduction, p. 88—Anomalous occurrences must be attended to. Suppose, for example, that an hospital were situated among factories where young persons were employed, the rate of mortality would be much less than amidst a mixed population. On the other hand, if the cases were from among the inmates of asylums for the aged, the mortality would on this account be much increased. As to the rest, the rates must be drawn from a very large average, to arrive at sufficiently satisfactory results, as to the comparative value of different modes of treatment. It may however, be fairly enough presumed I think, that the general diffusion of correct pathological and therapeutic knowledge leading, as it would necessarily do, to an enlightened and impartial spirit of eclecticism—combined with personal experience—together with a better organization of hospital attendance, would lead to a considerable diminution in the mortality of fever, as occurring under medical treatment. Into prophylactic considerations, I do not here enter.—From an examination of the printed Reports of the Institution of which I am one of the medical attendants, I find that from 1822 to 1834, a period of thirteen years, 6520 reported cases of fever have been admitted, of which 3092 were males, and 3428 females. Of these, 222 males died, and only 211 females; total deaths, 433—hence,  $6520 : 433 :: 100 : 6.6$ ; or nearly one in fourteen. Most females were admitted, yet we see that the absolute, as well

mental exertion are bad preparatives for fever. It is owing very much to these causes, that so many medical men are carried off during epidemics.\* Fever is a common occurrence in ships, transports especially, at least in cold or temperate regions, when, as necessarily happens in stormy weather, the hatches are closed, and the soldiers kept below. In warm climates, it would appear, that these causes do not produce such results, since I am not aware that fever ever breaks out in slave-ships, however horrible their condition may be in other respects. This is not only true of blacks, but seemingly of whites, as was exemplified in the deportation of the English from Cayenne. Those who have not been to sea, can hardly conceive the impurity which takes place in the air, from the concentration of the emanations from the bodies of so many human beings, together with sea-sickness, aggravated by the terror incident to persons in such a situation. Emigrant ships are sometimes attacked in the same way as transports, and from similar causes. The situation of people in these vessels, is sometimes wretched in the extreme. Excessive heat or cold, dirt, want, and grief, together with miserable unseaworthy vessels, are among the evils which they have to encounter. It is clear that deficiency of food merely, will not generate fever at sea, even when united with despondency, since we find that a once well-known disease called the scurvy, only takes place

as the relative mortality was least among them: hence, when we consider the great number of children on the list, in whom the difference of sex may be presumed to have little or no influence as to the final issue, the comparative mortality on the side of the males becomes more striking. The relative mortality differs materially in different years. The total number of cases given in 1824, is 214, total deaths 21: in 1825, the total cases are 415, while the sum of deaths is still 21. During 1828, the cases are 659, deaths, 29; but this was an epidemic year; and the fever having extended to the poors-house, and some factories, where many young people were employed, led to the seizure by this complaint, of a very considerable number of the children, among whom the mortality is always less. The treatment followed in this hospital, during the preceding term of years, was necessarily regulated by the views of the different medical attendants.

\* See the interesting details of the last illness and death, of one of the physicians attached to the Salpêtrière, in 1814, along with many remarkable cases of typhus, or ataxic fever, as the author terms it. Pinel, *Médecine, clinique*, p. 21, et seq.—Several melancholy examples of this kind, and among the rest, that of the much-lamented Dr. Shekelton, of Dundalk, are related in Barker and Cheyne's Report.



under these circumstances. So remarkable and fearful a result, is not the mere consequence of a congregation of human beings, but of an aggregation of them. They must be heaped together as it were, and respire the same air over and over, additionally corrupted by the exhalations of their bodies.\* The production of the fever-poison does not depend on the number alone, but upon the number, in relation to the space in which the individuals constituting it, have to live and breathe. It is even on record, that a single human being, closely confined in a narrow cell, has created the fever-poison—remaining free from fever however, but causing it in others.† The birth of fever in gaols, camps, and besieged cities, is matter of notorious occurrence. Ireland is the grand mart of fever, and in both town and country, the seeds of this malady are always rife, only requiring a few of the exciting causes, such as famine, misery, damp and cold, to produce a fearful increase.‡ The African and American savages, as I am able to affirm from personal observation, are as well or better lodged, than the majority of the peasantry of this country: it is astonishing, in truth, to any one accustomed to the decencies, I do not say the luxuries, of civilized life, to reflect

\* An admirable modern historian speaking of the sickness at the siege of Nürnberg by Tilly the Imperial general, attributes the disease in part to this source:—“Auf beyden Seiten hatten ansteckende Krankheiten, und der eng zusammengepressten Volksmenge, mehr als das Schwert des Feindes, die Mannschaft vermindert”—Schiller, *Geschichte des dreyssigjährigen Kriegs*—Carlsruhe, Zweiter Theil, p. 103.

† There is a horrible example of this in Harty's *Historic sketch of the epidemic in Ireland*, in 1817, 18, 19. Dub. 1820, p. 163.

Much valuable information on these points, and indeed on most others connected with fever, is furnished in the excellent “*Account of the rise, progress, and decline of fever in Ireland, in 1817*,” by Drs. Barker and Cheyne. There is a short but satisfactory historical introduction to the work, which itself is made up of the contributions of a great number of observers throughout the country. The public sanatory regulations are likewise given, and also a luminous summary of the opinions and practice recorded throughout the work.

‡ A multitude of medical authors have furnished their testimony as to the misery, want—and their consequences—the dirt and carelessness of the Irish poor. It is impossible to read the details of the different writers on fever in the Dublin hospital reports, and the *Transactions of the Irish College of Physicians*, without being convinced that penury, ignorance, and their usual results, improvidence and intemperance, are the leading sources of the excessive frequency, and constant continuance of fever in Ireland; and without the additional conviction, that this destructive disease must remain among us until the causes here mentioned, are removed, or at least mitigated.

upon the utter destitution in which the latter contrive to pass their lives. In the country, the houses are frequently without windows, and sometimes chimneys—in the towns, the labourers and inferior artisans, are heaped together in small squalid apartments, of which the windows are seldom made to open. The persons of men, women, and children, are too often encrusted with dirt; their miserable garments are rarely changed; their food is the insufficient half-nutritious potatoe, and sometimes a little meal, which is considered a luxury; but their portion too frequently, is sad, unmitigated destitution. Most of the population, especially in the towns, are pale and wretched-looking after the age of forty or fifty, and then or earlier, generally labour under chronic diseases. That this is no exaggerated picture, all who are minutely acquainted with their situation will readily agree, while it explains the great frequency and severity of epidemic fever among the people of this country.

There are several recorded instances, which it is difficult to deny the authenticity of, though the general question seems disposed of in the negative, of fever arising and becoming epidemic, from the stench occasioned by masses of putrid animal matter—as from stranded whales and other dead fish, over-full church-yards, the opening of dead bodies and tombs, and the emanations from the decaying carcasses of men and beasts after a battle.\* On the other hand, it seems quite certain that

\* Forestus mentions the production of fever in Holland by the rotten carcase of a stranded whale—Senac, *de recondita feb. intermit. et remit. natura*, gives a similar case from the filth thrown outside the walls of a city. Wolf and Diemerbroeck relate similar occurrences. The emanations arising from burial-places, amidst a dense population, have been said by many authorities to produce fever; certainly such emanations by lowering the general tone of health, will operate as a remote cause—I have myself experienced a very disagreeable heavy odour in walking through the Portuguese churches at Madeira, in which it is a common practice, as well as elsewhere, to bury the dead under the floors, which are arranged in small compartments like doors, for the purpose of gaining access to the soil underneath. Piattoli and the celebrated Vicq d' Azyr have left us learned and well-written summaries on the dangers of interment in cities, and the putrefaction of animal remains. Dr. Pascalis of New-York, has compiled a valuable little work from the labours of these authors, with additions of his own. Turner Thackrah in an admirable work on the effects of human occupations on health and longevity, has, in common with his predecessor, Ramazzini, noticed the operation of the various arti-



mere putrefaction has no such influence. Dead and putrid dogs, cats, and even horses, are to be seen every where; the contents of grave-yards, as in the noted case of the cemetery of the innocents at Paris, have been removed—indeed the practice is frequent in Catholic countries: young men spend whole days over the decaying subjects, as they are called, of dissecting rooms—and the practice of catgut-making and other occupations of a similar nature, are carried on in numerous places, and among the rest at Montfaucon, an immense horrid-looking receptacle for the purpose, near Paris—without in any case, producing fever, or at least, rendering it perceptibly more frequent than under other circumstances. All this goes to show, that putrefaction, though it may prove an accessory, is not in general an active promoting cause of fever. I need hardly say, that I do not participate in the opinion of those individuals, and it is said nations, who affirm that putrid stench promotes health. The Romans by the way, are said to have carried small portions of putrid fish about with them—perhaps, if one may offer a conjecture respecting so strange a custom, for the sake of the ammonia which it exhales.

Have emanations from the earth, sometimes called telluric, any influence in promoting fever? And if so, what is their nature, and how do they operate? Sydenham talks about secret and inexplicable alterations in the bowels of the earth, and the secret constitution of the air.\* This last point is also dwelt upon by Hoffmann.† The subject however, is un-

ficial or accidental emanations to which workmen and other persons are exposed, in the production of a tendency to the attacks of febrile and other diseases. Reid (*Transact. of the Irish Coll. of Phys.* vol. III. p. 78) considers slaughter-houses as productive of fever. It is related, by the way, in Rogers' treatise on epidemic diseases, Dublin, 1734, p. 41, that a violent and fatal fever broke out among the scholars at Wadham college, Oxford, which was attributed to the emanations from a large heap of putrid cabbages. The general opinion of the profession however, is against the ordinary production of fever from mere putrid effluvia, independent of the fever-poison. See a prize essay by Magill, in the 8th and 9th volume of the *New-York medical and surgical journal*, and Chisholm in the *Edinburgh medical and surgical journal*, vol. XVII. p. 389—two elaborate and truly excellent essays.

\* *Op. universa*, § 1, cap. I.

† *Quin aeris constitutionem sequuntur hæ febres epidemicæ, ac inde magis, vel minus deterioris sunt genii; Med. rat. Tom. IV. de feb. petechizans. p. 229.*

fortunately one in which there is more room for speculation than reasoning. That epidemic influences exist, there can be no doubt; and it is no less indubitable that they are governed by certain laws, with which however, we are very imperfectly acquainted. As to what those influences are, not including contagion, we are wholly in the dark. I can see no clew to the difficulty, but perhaps posterity may prove more sagacious than the existing generation of mankind. Certain meteoric appearances, earthquakes and so forth, have been associated with plague and pestilence—but these phenomena are much more frequently separate than united, nor can we guess why they should ever be connected. On the whole, I am inclined to believe that fever so called, has seldom any connexion with these epidemic influences, always excepting contagion, which last, with predisposing want and misery, seems generally adequate to account for its propagation and ravages. Even authors who attach importance to the condition of the air, also admit the operation of these other causes.\* The co-existence of epizooties with human epidemics, sometimes occurs. Perhaps the concomitance is accidental; for generally speaking, when animals are affected, the human race is free, and conversely. What share, let us now ask, does malaria exert in the production of fever? Very little, I should think, in the ordinary fever of these countries. It is a plentiful source of the periodic fevers of these and other climates, but hardly, I should think, of continued ones. The emanations from drains, sewers, cess-pools and the like, are of a mixed nature, and abound in the products of animal as well as vegetable decomposition, yet they seldom prove a source of fever, so far as my own observation extends. No doubt they possess a secondary, and generally, an injurious influence, but this is not now under consideration. On the whole, I should consider malaria in these countries, as a very

\* Rutty, in his Chronological history of the weather, Introduction, p. 32, gives it as his opinion, that “the different state of the air is one of the principal forms of the variety of epidemic diseases.” He admits however, the influence of other agents, the diet more especially, as evinced in the epidemics that prevailed in 1728 and 1729 in the north, and in 1741, in the whole of Ireland, and which followed a dearth and badness of provisions.



feeble source of continued fever. Every well-informed practitioner is acquainted with the change that has taken place in the opinions of the late Dr. Armstrong on this subject. He does not scruple to say, in his very able lectures, that continued fever is the sole produce of malaria, while in his excellent work on typhus, he has advocated its origin from contagion.\* In my humble estimation, and with due deference to the memory of so talented a writer, his reasoning on the subject, founded principally on the supposed evil consequences contingent on the admission of the doctrine of contagion, leads to an erroneous conclusion—Examples of a similar style of argument, may be found in Maclean's works, and latterly, in some letters of Dr. Tytler—both on the same subject. Certainly it must be admitted, that no man is entitled to urge his convictions merely, as a logical ground of reasoning; it has often been done however, and so far as such a procedure is influential, must necessarily be productive of much error.

Having gone over the occasional and epidemic sources of fever, I now come to the formal consideration of the important and much-debated question of contagion.† Doubtless, contagion, both mediate and immediate, otherwise infection, for these are virtually two names for the same thing, is a frequent property of fever.‡ The poison may operate im-

\* Alison has successfully opposed the hypothesis of the ordinary production of continued fever from mere malaria, to the exclusion of contagion. *Ed. med. and surg. journ.* vol. XXVIII. p. 237.

† It is remarkable that some writers have insisted that the doctrine of contagion is a mere modern invention, unknown to the ancients. Maclean, as is well known, has ascribed its introduction from political motives, to Fracastorius. But as Naumann well observes, (*Handbuch, dritter Band, p. 278,*) not only medical, but non-medical men, poets and historians, have often recorded their belief in it; see, for example, Virgil, *Bucol. Ecl. I. v. 51*.

‡ Speaking of typhus, Martinet thus expresses himself—"Affection dependant toujours d' un foyer d' infection"—*Clinique med.* p. 495—There is good evidence, Alison observes, of the contagious poison of fever attaching itself to fomites, as clothes and furniture, and acting on persons at the end of weeks, or perhaps months. *Pathol.* p. 189—It is a matter of notoriety, that the fever generated among Moore's troops on board the transports on their passage from Corunna, was propagated after their arrival in England, among the nurses and medical attendants in England. Hennin states that some villages in Portugal were so impregnated with the contagion of fever, that a few hours' residence in them occasioned headache and fever in

mediately on the susceptible person, or through the intervention of clothes, bedding, furniture, the floors and walls of apartments, and possibly many other vehicles. The testimony, and the concurrence of so very many individuals on this point, do away, in some measure, with the necessity of formally debating the question; but their testimony, nevertheless, though highly respectable, has not obtained universal assent. The weight of evidence is centered in the circumstance of the liability of nurses, physicians, clergymen, the visitors and friends of the sick—and in fine, of all who come, directly or indirectly, in contact with the diseased. I should weary, were I to cite even a tithe of the authors who have borne testimony on the subject. It is tolerably certain that fever does not communicate itself farther than a few feet from the person affected, when there is sufficient ventilation; and in this case, persons at the opposite side of a street, at the other end of a passage, and even in the same room, if not in close contact with the patient, run no sort of danger. I have however, seen individuals in the chronic wards of an hospital, more than once contract fever: they might perhaps, have gone into the fever-wards. The risk of contagion is very small, with proper cleanliness and ventilation, which may be easily insured in a well-constructed hospital, and still better in a roomy private house, but with much difficulty in the narrow dirty dwellings of the poor. Independent of the dangers which they have to encounter, it is almost incredible what scenes, medical men witness in such places. I remember on one occasion, to give an instance out of hundreds that might be related, going to see a family desolated with fever. In an upper

many persons, if not arrested by vomiting or diarrhoea. *Military surgery*, p. 205. A number of striking cases, showing the contagious nature of fever, are related in an excellent paper by Marsh, *Dub. hosp. rep.* vol. IV. Drs. Percival, Cheyne, Stoker, Grattan, Graves, O'Brian, Barker, and Reid, all yield their testimony in favour of contagion. *Vid. Transact. of the Irish Coll. of Phys.* vol. I—IV. A highly respectable practitioner, Dr. Stewart of Lisburn, informed me of a remarkable example of contagion that he witnessed in 1796, at Norwich, and in which forty-seven men, of the Warwickshire Militia, of which he had the charge, contracted typhus from being placed in an apartment, that two years previously, had been occupied by the sick in fever of the 88th Regiment. The room had been previously whitewashed and ventilated. As soon as the men were removed to tents, the fever ceased to spread, and none died afterwards, though two had lost their lives previously.



cock-loft, without chimney or window, and where it was necessary to take a candle to see, even while the broad day-light shone without, lay three boys on some straw, all in the height of petechial fever. The air of the place was intolerable—In the sleeping-places of the poor there is frequently no provision for fresh air, as there is either no fire-place, or the windows do not open. What fountains of disease must such places prove? One would think that every sane human being was aware of the deep—the vital importance of a continual supply of fresh air, yet how narrow and confined is the space that is allotted to our apartments. I have frequently seen people among the middle classes, lying ill of fever in chambers of which the chimneys, according to a barbarous custom still prevailing, were closely stuffed. It is in fine, not less certain than the existence of fever itself, that it is only directly communicable at a certain distance. Foderé, among many interesting details of the retreat of the French army from Italy, mentions the circumstance of the soldiers communicating fever, though free themselves, to the inhabitants of the towns and villages through which they passed. These poor creatures were ill fed, packed together at their resting-places, dispirited, and with the remains of their linen, as he expresses it, glued to their bodies. Many of these soldiers were afterwards affected with the poison created by themselves, where they came to live in the limited precincts of houses, and when the partial excitement attending a continual pursuit had ceased. Thanks to the philanthropy of Howard, fever is now seldom created in jails by the narrow space in which prisoners were once, but happily now no longer confined; and such a circumstance as those brought up for trial, poisoning as it were, the functionaries and others collected in courts of justice, will probably never recur in Britain again.\* Mankind are still more zealous in the enforcement of their own, too frequently partial and despotic enactments, than in the study and observance of the all-important never-ceasing laws, laid down by the Author of nature, Himself.

\* See Alderson on contagion, Hull, 1788, p. 10. In this work, the production of the febrile poison from the confinement of a number of men in a narrow limited space, is clearly set forth.

The period of incubation is one of some interest in the consideration of fevers. How long does it ever extend to? This is a question to which no decided reply can perhaps be made.\* Some of the soldiers from Walcheren, took ill after their return to England: this however, in some cases, might have been a fever of another stamp; and at any rate, the question of periodic fevers is not now under consideration. Individuals who have gone to sea after previous exposure to contagion, have had fever several days after going on board; this, it has been urged, was pro tanto, an instance of dormant fever. But there is this embarrassment attending questions of the kind, that these supposed examples of incubation, may be explained by the occurrence of the disease from other causes. Two or three days are probably the usual extent of the latent period; but there are frequent examples of people sickening immediately after inhaling the stench from a sick beggar, or the excretions of a fever patient.† Cases of so-called spontaneous fever, that is to say, of fever occasioned by other causes than contagion, will be continually liable to be confounded with fever arising from contagion itself; it is not always easy to make the distinction, nor is it often perhaps, of great importance to do so.‡

What is the nature of the febrile poison? Is it practicable

\* Der Zeitraum von der Infection bis zum Ausbruche der ansteckenden Krankheiten, ist nach der verschiedenen Natur derselben verschieden, und es haben darauf selbst individuelle Umstände Einfluss. Conradi, Handbuch der allgemeinen Pathologie, Cassel, 1832, § 330. Neque minus experientia constat, diu omnino latitare posse, susceptum in corpore contagium, interdum per aliquot septimanas, antequam in actum ducatur et pernicialem vim exserat. Hoffmann, med. rat. Tom. IV. de feb. petechial, p. 283.

† Nurses and washerwomen connected with fever patients, are more peculiarly liable to attacks, as I have had occasion to witness. Vid. Marsh in Dub. hosp. rep. Observations on the origin and latent period of fever infection, vol. IV. p. 460—and Reid in the Transact. of the Coll. of Phys. in Ireland, vol. III. p. 94.

‡ The predisposition to fever from contagion, and fever from other causes, is far from being identical. A supply of generous food, not running into excess, operates as a preservative, quoad, against epidemic fever, but not against fever attended with high excitement, when its causes come into operation. "It seems to be ascertained however," as a writer of much originality observes, "that persons of particular constitutions are predisposed to those febrile actions of the sanguiferous system which constitute the inflammatory fever, as there is a propensity to convulsions in children, and to tetanus in the inhabitants of warm climates." See Abernethy, On the constitutional origin, and treatment of local diseases.



to enumerate the physical or chemical qualities of a substance, which does not with certainty, come directly under the operation of any of the senses. We cannot lay hold of it for analysis—and we must be satisfied at present, with knowing that it is something generated in abundance by the human body, under certain circumstances—and that a state of fever, though a frequent, is not a necessary ingredient among these circumstances. It is hardly necessary, to repeat again more explicitly, that a contagious fever, may arise from causes totally independent of contagion.\*

The communicability of fever, from the human subject to the inferior animals, is very uncertain; occasional instances have been affirmed, but they are on the whole, rare and doubtful. Some epizootic disorders however, are more easily imparted to man—such for example, is the malignant anthrax or carbuncle. It may be stated as a general rule, that the epidemic disorders of men and animals are not intercommunicable. Other maladies, not epidemic, may be; a man for example, may contract glanders from a horse, but I do not here enter into the consideration of the question.† I look

\* Speaking of the contagious origin of fever, Harty passes some very interesting remarks on the propagation of typhus in combination with some other complaints, such as dysentery, puerperal fever, hospital gangrene, etc., which he has called compound contagion, (see Harty on dysentery, p. 261, et seq.) He appears to have borrowed the term from Willan, (see his Reports on the Diseases of London,) but he has very much enlarged on it. The subject is full of importance. The production of ordinary fever, from puerperal fever and small-pox, is noticed by Marsh, Dublin hosp. reports, vol. IV. p. 521. Many writers have touched upon the united dissemination of typhus and dysentery. Harty, among others, gives an instance of the seeming propagation of typhus from a case of small-pox. I have seen petechiæ and vibices cover the body of a stout servant-girl, who died of small-pox; many others relate the same thing.

† Fordyce and other authors talk about the inferior animals, hogs for example, contracting fever, but such instances, if they ever occur, must be rare—Stahl denies their occurrence altogether. Several modern writers speak of the production of fever in brutes, as dogs and cats, by confining them in contact with putrid substances, also by injecting such into their veins, or the subcutaneous cellular tissue. (Vid. Gendrin, sur la fièvre; also his Hist. anat. des inflam. Tome II.) Might we not consider these animals in such cases, as being merely poisoned? Bichat makes an observation on this point, which I here quote.—“Il est rarement en notre pouvoir de produire artificiellement, dans les espèces différentes de la nôtre, des maladies semblables à celles qui nous affligent.” Sur la vie et la mort, p. 117. Lucretius affirms that the plague at Athens extended to birds and beasts; but he is not borne

upon this circumstance of non-communicability from one to the other, as a signal example of God's wisdom and goodness; since the animated portion of the creation would be speedily swept off the earth, if men and animals could reciprocate with each other, the various epidemic disorders to which they are respectively subject.\*

The last thing which I shall consider, relative to epidemic fever, is the question of susceptibility.† It does not require the aid of demonstration to show, that if fevers were indefi-

out in this point by Thucydides, (lib. II.) whom he copies in other respects—who only remarks that birds and animals either avoided the scattered dead, or certainly perished if they ever tasted.

Multaque humi cum inhumata jacerent corpora supra  
 Corporibus, tamen alituum genus atque ferarum,  
 Aut procul absiliebat, ut acrem exiret odorem :  
 Aut ubi gustârat, languebat morte propinquâ.  
 Nec tamen omnino temere illis solibus ulla  
 Comparebat avis, nec noctibu' sæcla ferarum  
 Exhibant sylvis: languebant pleraque morbo,  
 Et moriebanter: cum primis fida canum vis  
 Strata viis animam ponebat in omnibus ægram.  
 Extorquebat enim vitam vis morbida membris.

Lucretii Cari de rerum natura, Francofurti, 1583, lib. VI.

Poetical writers generally embody the opinions of their time when they touch on these subjects; sometimes indeed, the only record of such opinions is contained in their works. Homer thus notices the pestilence in the Grecian camp, which is said to have affected not only men but animals, in the well-known passage:—

Οὐρῆας μὲν πρῶτον ἐπώχετο, καὶ κύνας ἀργούς·  
 Αὐτὰρ ἐπειτ' αὐτοῖσι βέλος ἔχευεν κῆς ἐφίεις,  
 Βάλλ' αἰεὶ δὲ πυραὶ νεκύων καίοντο θάμναι, etc. Ilias, lib. I.

\* Sapientia Dei infinita, potentia et bonitas inexhausta, sicut in omnibus et singulis creaturis conspicuæ sunt. Stahl, *Ars sanandi morb. cum expectatione*, pars, II.

† Conradi well observes—"Eine besondere Bedingung der Wirksamkeit der ansteckenden Stoffe liegt in der specifischen Disposition oder der Empfänglichkeit für dieselben, der wohl allerdings eine bestimmte Mischung zum Grunde liegen mag, deren Natur in dessen ganz unbekannt ist."—*Handbuch der allgemeinen Pathologie*, § 326.—On this point Cullen observes: "It certainly happens, that during the prevalence of epidemics, when every body is exposed, a certain, and sometimes a small number only, are seized, and some always escape." *Works by Thomson*, vol. I. p. 544. Brera also remarks—"Una predisposizione adunque si esige tanto per sentire, quanto per subire gli effetti delle cause morbose,-onde si accendano i processi che manifestar devono l' affezione."—*Prolegomeni clinici*, p. 50.



nately communicable, the human race would be eventually worn out by their incessant propagation. There are certain limits which have been set to them by our Creator, in order to preserve mankind. We find from observation, that a person who has had fever once, does not readily contract it again, at least until some time has elapsed. It is true, there are exceptions to this. I attended two brothers who had fever at the same time; one of them had hardly recovered, ere he again took ill, and went through all the stages of fever a second time: similar instances are recorded by various writers. We find that the very young and the aged, are less liable to fever than the adolescent and the middle aged; the gross mortality in adults from this cause, is very great. The young and the robust are very liable to ordinary fever, attended with high excitement; but the weak and the debilitated, to epidemic fever, or fever without high excitement. We find that the susceptibility to contagious fever, is very small in persons of tolerable strength, regular and temperate habits, not inordinately exposed to cold, wet, or fatigue, and provided with energetic well-regulated minds. Dr. Gregory calculated that he had been exposed very many thousand times to the influence of contagion, without contracting fever;\* Haygarth also, has passed a similar remark respecting himself: how many other medical men might make the same observation. As for myself, I have had the good fortune to escape typhus altogether, though much exposed to it for several years. When persons come daily in frequent contact with fever, their susceptibility is very much lessened, if it do not even cease for the time; nor is it always necessary for the acquirement of this exemption, that it should be first purchased by taking fever.†

\* Many who have enjoyed, in common with myself, the satisfaction of listening to this able teacher, will regret with me that no record seems to have taken place of the valuable information contained in his most interesting lectures.

† An author of considerable celebrity has written a prize dissertation on the art of exciting and of moderating fever for the cure of chronic diseases. It is entitled—“*Sur l’art d’exciter et de modérer la fièvre pour la guérison des maladies chroniques,*” par Alexis Pujol. It will be generally admitted I fancy, that we are possessed of no such power as that which is assumed in this dissertation; whether we possess it indirectly, is another question. The production of fever by placing an individual in circumstances wherein he could run a chance of contracting it, would be hardly

The pathology of fever is perhaps one of the most bewildering topics that has ever engaged the human attention.\* The very numerous and frequently arbitrary divisions into which this protean malady has been cast, are strong evidence of the confusion that has prevailed. It was hoped by parceling out the subject as it were, and taking it in detail, that the difficulties would be more easily grappled with; and certainly the names which were bestowed so liberally, of nervous, typhoid, ataxic, bilious, gastric, and encephalic fevers, with a hundred others, seemed to define with more precision, the nature of the disease.† The elucidations of nosology are frequently deceptive. Mankind have a general tendency to cheat themselves with names. The manner of our education, modes of talking, thinking, writing, our prejudices, and our very passions even, all tend to propagate and confirm this delusive habit. Words are highly useful, nay indispensable, as the signs or names of things; but their utility is diminished or distorted, when we come to regard them, to the total or partial exclusion of the phenomena which they merely represent. Such however, is the force of habit, that

justifiable. As to its effects on chronic diseases when it takes place accidentally, there can be no doubt that they are sometimes beneficial, and sometimes otherwise. One supposed way among the ancients, of creating an artificial fever, was by covering the patient with heaps of clothes, “multis vestimentis,” as Celsus has it, lib. III. cap. 9. And Pujol talks in this same dissertation, of producing it by the cold-bath, or by excessive bodily exertion; means obviously inadequate, though possibly productive of a beneficial arterial excitement.

\* Qui itaque haberet perfectè intellectas omnes conditiones requisitas ad actiones, ille perspiceret clarè defectum conditionis ex cognito morbo, et rursum bene caperet ex cognito defectu naturam morbi inde necessariò sequentis : quæ scientia Παθολογία appellatur. Boerhaave, Institutiones medicæ. § 698.

Pathology is at once the most useful and the most painful study, observes a talented author, vid. Bell's (John) works, vol. IV. p. 10.

† The following observations by an able modern writer, are pertinent to the subject—“Il fut une époque en effet, où les mèdecins créèrent, avec la plus malheureuse fécondité, un nombre infini d'espèces de fièvres. Ce mot semblait être devenu tellement banal, si j'ose m'exprimer ainsi, qu'il n'était presque aucune maladie aiguë à laquelle on ne l'appliquât.” Bouillaud, art. fièvre, Dict. de med. et de chirurgie.—Si l'on croyait qu'il fut dans l'intérêt de la science d'utiliser les observations particulières publiées jusqu'à ce jour sur les fièvres inflammatoire, bilieuse, muqueuse, adynamique et ataxique, il faudrait avant tout, les soumettre à un nouvel examen, et les juger indépendamment du titre qui leur a été imposé. Contanceau et Rayer, Dict. de med. art. fièvre.



we find it very difficult to overcome this tendency, which, like a foul and rampant weed, mantling round a noble building, has penetrated into the very recesses of science, the whole structure of which, it has threatened more than once, to overwhelm and destroy.\* It is easy to multiply words and works on this subject, but there is unfortunately very little known on very many important points, of the pathology of fever. Unquestionably, our knowledge has advanced by slow degrees, but by no means commensurately with the increase of books which now swarm in so many languages. There is a very general tendency to bring forward partially supported hypotheses, as unquestionable theories, to the great prejudice of scientific medicine.† No doubt, if we confined our observations merely to what was known, we should have little to say indeed; but when we do hypothetize, why not give our speculations their real name—why attempt to pass them for more than they are worth.‡ I confess I hardly expect to see things proceed as they ought to do, until I witness a greater uniformity, as well as a much higher standard of professional education; till our hospital establishments are on a more extensive scale; and until those who have the care of them are liberally rewarded, and selected for the performance of this duty from those members of the medical community who evince the highest talents and the most extensive range of

\* Gegenwärtig herrscht offenbar in der Heilkunde viel Verwirrung, ein reges Spiel der Leidenschaften, Autoritäten und des Egoismus, ein merkwürdiges Durchkreuzen einer ziemlich rohen blinden Empirie mit speculativer Philosophie und spitzfindigem Dogmatismus. Namentlich wird die Wirkung der Heilmittel im gefunden und kranken Zustande bald nach den Grundsätzen der Chimie, bald nach denen einer dynamischen Naturanschauung, bald nach einer systemlosen oder vom System beherrschten Einfahrung gedeutet. Richter, Ausführliche Arzneimittellehre, Berlin, 1826, Erster Band, Vorrede.

† Cullen affirms the propensity to be universal; but he justly adds, that the only means of rendering it safe, is to engage in the study of science to the full extent. Works by Thomson, vol. I. p. 418. By the way, Cullen's hypothesis respecting the nature of fever, which he borrowed from Hoffmann, affords an excellent example in point. The original passage commences thus—"Febrium quoque indoles soboles spasmi est," etc. Hoffmann, Opuscula, Med. pract. Dissert. De naturæ et artis efficacia in medendo, p. 22.

‡ Reine Erfahrungen ohne Hypothesen und Systeme sind Undinge, so gut wie Hypothesen und Systeme ohne Erfahrungen. Treviranus, Biologie, Erster Band, p. 151.

information.\* Such individuals would possess both the necessary leisure and inclination ; and we might confidently hope that their contributions, along with those of the various aspirants to the charge of such institutions, together with the general spirit of emulation inevitably excited, would in a few years change the face of medical science.

One of the greatest obstacles to the improvement of pathology at present, is perhaps, the spirit of pathology itself. We occasionally forget that disease is an act of our organization, and regard the mere results or accompaniments, as an explanation of disease itself. These organic changes, for to such do I allude, are very interesting, as part of the phenomena of diseased action ; but to look at all disease through the medium of visible organic changes, is doubtless, highly erroneous.† I conceive that the improvement of this branch of science will be best effected by the steady observation and careful analysis of the various healthy and diseased functions, on the aggregate of which we bestow the term life ; a term however, as I have shewn below, almost as variously defined, as there have been found persons willing to attempt its definition.‡ Let this be done over and over, by different ob-

\* There is certainly no profession or body of men in the community, who devote so much of their time to the gratuitous furtherance of the welfare of that community, as the medical. The claims however, which have been made upon their voluntary liberality, have proceeded to an injurious length—injurious to the profession, and to the public, since it can never be the real interest of that public to deny honest labour its reward. Endowed institutions however, would be productive of much advantage, by affording the individuals who had the charge of them, the leisure as well as the opportunity of cultivating the various branches of medical science, with a severity and precision which men engaged in practice have seldom the means or the inclination to bestow.

† On this point Holland has judiciously observed—"One of the most striking errors of pathological works, is the almost exclusive attention that is paid in them to the examination of organs, primarily and chiefly diseased, to the utter neglect of the consideration of the various effects they produce, which frequently convert a local into a general affection." Inquiry into the principles and practice of medicine, vol I. p. 74.

‡ Like other complex terms, life can obviously be defined only by an enumeration of the phenomena which it associates. See Henry on the physiology of the nervous system, p. 59 of the third Report of the British Association for the advancement of science.—Un corps vivant, considéré comme un objet des recherches chimiques est un laboratoire, dans lequel s'accomplissent une foule d'opérations chimiques, dont



servers, with a careful attention to the terminology, by which so many disputes and misconceptions would be obviated, and doubtless, we shall in due time, witness a gradual but steady improvement.

An extraordinary circumstance, and one of not very unfrequent occurrence, is the act namely, of decking out a number of truisms in a new garb, and of ushering them forth to the world as important discoveries.\* Of a similiar cast is the process of expanding some trivial circumstance into a copious theory, and of assigning to it a rank and importance, which facts by no means justify, though it serves to bolster up a claim to originality, that rarest of qualities.† As to the unhappy few, those who misrepresent the truths of nature—those, who coin baseless facts whereon to erect a worthless

le résultat définitif est, d' une part de produire tous les phénomènes dont l' ensemble constitue ce que nous appellons la *vie*.—Berzelius, *Traité de chimie*, Paris, 1831, Tome V. *Chimie organique*, p. 1. Esslinger's translation.—Alles Leben besteht also in beständigen Zersetzungen und Zusammensetzungen; alles Lebendige ist ein unaufhörlich erlöschendes, und unaufhörlich sich wieder entzündendes Meteor. Treviranus, *Biologie*, Gottingen, 1805, Dritter Band, p. 591.—Si pour nous faire une idée juste de l'essence de la vie, nous nous apercevrons qu' elle consiste dans la faculté qu' ont certaines combinaisons corporelles de durer pendant un temps et sous une forme déterminée, en attirant sans cesse dans leur composition une partie des substances environnantes, et en rendant aux élémens des portions de leur propre substance. Cuvier, *Règne animale*, Paris, 1817, Tome I. p. 12, 13.—Vita nihil aliud est formaliter, quam conservatio corporis in mixtione quidem corruptibili, sed sine omni corruptionis actuali eventu. Stahl, *Theoria medica vera*.—Einem Organismus, dessen Thätigkeit wir wahrnehmen, Schreiben wir Leben zu. Rudolphi, *Grundriss der physiologie*, Erster Band, § 290.

\* It is no uncommon trick (says an original author) with some writers to invent and adopt, on the slightest pretext, complete new sets of technical terms—the more strange and uncouth, the better for their purpose; and thus to pass off long-known truths for prodigious discoveries, and gain the credit of universal originality by the boldness of their innovations in language: like some voyagers of discovery, who *take possession* of countries, whether before-visited or not, by formally giving them new names. Whately's rhetoric, third ed. p. 270.

† It is remarkable, that inflammation of the great veins, which has been supposed by some pathologists of late years, without any adequate foundation I conceive, to be a frequent cause of fever, was also looked upon by the ancients in this light; εὔτε ὁκόσοι τήνδε τήν κατάστασιν εἶδον, (φλεγμονή ἀμφὶ τὴν φλεβὰ) καῦσον ἐκάλεον—Aretæus de causis et signis acutorum morborum, lib. II. cap. VIII.—Τὴν τῆς κοίλης φλεβὸς φλεγμασίην καὶ παχείης ἀρτηρίης, αἱ παρὰ τὴν ῥάχιν τέτανται, καύσου ἰδέην ἐκάλεον οἱ πρόσθεν, De curatione acutorum morborum, lib. II. cap. VII.

notoriety—and those who deny from sinister motives, the facts recorded in the experience of others, it is impossible to brand their conduct with sufficient infamy. But after all this, what do we know of the pathology of fever? I am afraid that our information extends but a short way into the curious and intricate phenomena presented by this wonderful disease. It is impossible to go beyond a certain length in our researches into the processes of our organization, but our knowledge of fever seems peculiarly limited.\* A person feels himself affected with languor, stupor, head-ache, giddiness, pains in the back and loins, loss of appetite, thirst, and burning heat over the surface, and not less disinclination than incapability of exertion.† How are these occurrences to be explained? From the suddenness of the onset, we should say that the nervous system is affected. There is probably a certain degree of congestion in the brain and spinal marrow; the function of innervation, both as regards the internal and external senses and the power of muscular motion, has been seized with a rapid diminution of its energy. Sometimes, as in the case of plague, this diminution has gone the length of occasioning the instantaneous loss of life. Men stricken with the plague-poison, as we are told by Sydenham and others, have been known to stagger, fall prostrate, and expire. Is there any other way of accounting for death, except by the sudden suspension of the functions of the brain and its dependencies? To explain how the cause of fever, whatever it may be, thus operates on the nervous energies, would be to ascend to the consideration of a class of phenomena, which must for ever lie beyond the reach of human inquiry, and which consequently, it would be vain to attempt to explore.‡ In a little time, the organs of respiration and circulation are affected, whether from the direct action of morbid nervous influence, is un-

\* *L'homme ne connaît l'essence de rien.* Cabanis, *Degré du certitude de la médecine*, Paris, 1819, p. 54.

† Galen, not to mention others, seemed to consider the indoles of fever, to consist, in some measure, in a very great augmentation of the natural heat: "*Febrim esse, cum adeo immoderate auctus calor est, ut et hominem offendat, et actionem lædat: quod si neutrum adhuc efficiat, quantumvis si homo nunc quam ante calidior, non tamen febricitare eum monstravimus.*" *Methodi medendi*, lib. VIII.

‡ See Wilson on the action of morbid sympathies, Edinburgh, 1818, p. 41.



known. However that may be, the breathing becomes hurried and laborious, and the motions of the heart are increased in force and frequency. It is often difficult to determine in what cases and how far, the current of the blood is limited in its velocity. When we consider the debility which is superinduced in fever, especially in the latter stages, we may presume that the circulation becomes slower, at least in the capillaries; as to local affections of the circulation, they remain to be spoken of. The precise period at which the secretory apparatus becomes affected, is unknown; it probably varies.\* The sensible, and perhaps the insensible perspiration, is generally more or less suppressed from the beginning; all the excretions and secretions however, are progressively vitiated; the saliva, the mucus of the eye, of the bronchial tubes, and of the intestinal canal; the urine, the bile, and most likely the pancreatic fluid, are all variously affected. The process of interstitial secretion and absorption, is probably much modified; the fat disappears, and the muscles lose their healthy aspect. Sometimes in the advanced stages, an adventitious fluid is poured out in some of the so-called cavities—for instance, into the pleura, the ventricles of the brain, and the peritoneum. It is hardly necessary to go minutely into the varieties presented by the urine, bile, saliva, and so forth; they will be sufficiently noticed in the diagnosis. By the ancient physicians, they received a degree of attention, which would now be considered incommensurate with their importance. How far these alterations depend on deranged or lessened nervous influence, or on the depraved condition of the blood, or finally, on both, has not been exactly determined. The alterations of the blood itself, the queen of fluids and pabulum of life, are obvious from an early period. In many cases at first, particularly in fever of high excitement, or fever combined with inflammation, the blood when drawn, is rich and tenacious, throwing up what has been called the buffy coat.

\* Während ihrem ganzen Verlauf eine verminderte Ernährung des ganzen Körpers, und im Anfang eine Beschränkung aller oder der meisten Secretionen statt findet, während gegen das Ende der Krankheit die Absonderungen vermehrt und meistens verändert eintreten, und damit die Krankheit aufhört. Gmelin, Allgemeine Therapie, p. 188.

As the disease proceeds, these characters are no longer present—the blood becomes thin and watery, nearly destitute of fibrine: indeed the deterioration is at times so great, that it is truly wonderful how life can subsist along with it.\* It is reasonable to presume, in the course of fever, from the partial suspension of the all-important functions of the blood—its own reparation and arterialization in the first place, the diminution of the process of interstitial deposition, the retention of some ingredients, and the absorption of vitiated materials which are not commonly if ever, met with in sound blood, that this fluid is amazingly altered for the worse.† These diseased processes, operating in a circle, reproduce and aggravate the morbid changes already mentioned. No excretion, no secretion, so far as they continue to be performed, can be sound; and in the consummation of the universal degradation of solids and fluids, almost amounting to putridity, which sometimes ensues in fever, we cannot but feel the most lively astonishment, as I must often express myself, how a recovery can ever take place. The provisions which nature has in

\* The old writers were many of them of opinion, that in the course of malignant and putrid fevers, so called, the blood itself acquired a foetid putrid character. It is impossible that the blood could ever become putrid during the life of the individual; in other respects however, it may be greatly vitiated and loaded with impurities. For many interesting facts and observations on the subject, consult, Bufalini, *Patologia analitica*, Pesaro, 1828, Tomo II. p. p. 166, 242, 286, 698.—Dr. Clanny (vid. *Lancet*) has stated that the fibrine of the blood in the course of fever becomes gradually diminished in quality, that the watery portion predominates more and more, and that the process of sanguification is partially or completely interrupted. Similar views have been entertained from an early period, and are now very general. I do not conceive however, that these phenomena include the essence of fever, though doubtless, they form a portion of the series of intricate and progressive changes which collectively bear that name.—Organic chemistry, though capable of throwing much collateral light on the healthy and morbid functions of the animal economy, is far I conceive, from being able to reveal the nature and succession of processes so very different in complexion from those which are included under its own more peculiar province.

† Borelli says that he once saw the blood in fever quite white. But his observations abound with so many marvellous relations, as occasionally to throw more than doubt on their authenticity; however, here is the passage—“Anno 1648, virum vidi febre maligna detentum, cujus sanguis statim à phlebotomia albedinem lactis retulit, quod rarissimum existimo, et a læsa facultate sanguifica chylum immutatum relinquente factum fuisse. Borelli, *hist. et observat. medico-phys.* Parisiis, 1757. *Observat.* XXV. Sanguis albus instar lactis.



store for this purpose, it is at present beyond the scope of human faculties to fathom. Adequate and all-sufficient they frequently are ; but we are no less confounded when we attempt to ascertain them, than when we try to determine the causes of the prostration which precedes their operation. One of the most remarkable things perhaps, in the pathology of fever, is the excessive alteration which takes place in all the organs of relation, and which it is almost as difficult to appreciate, as to account for.\* To the eye, light is sometimes intolerable—at other times, indifferent—Sometimes colours are perverted from their ordinary seeming. Occasionally, objects seem to present themselves to the patient's attention, which have only an ideal existence, but which, to his consciousness, possess all the force of reality. The same observations may be applied to the other senses, those of hearing, taste, smell, and touch. The patient is perhaps annoyed with ideal sounds ; ordinary ones are either felt with distressing intenseness, or pass unnoticed ; the most delicious viands are repelled with disgust, the most fragrant perfumes are no longer relished, and the sense of touch, in its double capacity of perceiving resistance and extension, seems hardly to have any existence. The impressions arising from what are styled the internal senses, are very much modified indeed. Sensations generally of a disagreeable, if not distressing character, are returned from organs in a state of disease, from which any, or hardly any, unless pleasurable ones, emanate in health : they are almost insusceptible of analysis ; but we are entitled to presume, that they constitute in the aggregate, that peculiar condition to which we may give the general appellation of a consciousness of ill health.† It is not to be

\* *Functiones sensiferas in febris æque adfectas esse, docent sentimenta morbosa, alior, æstus, et dolores. Tóltényi, De princip. pathol. gen. Vindobon. 1831, cap. LVIII. § 1669. La fièvre est une excitation cérébrale et nerveuse, idiopathique ou sympathique, qui se manifeste promptement partout par l'influence de ces organes, et qui est aussi promptement qu'universellement repandue. Georget, Physiologie du système nerveux, Tome I. p. 191.*

† Reil expresses himself nearly in a similar manner—"Dieser anomale Zustand wird der Seele durch das Gemeingefühl und zwar meistens als unangenehmes Gefühl dargestellt. Daher die Krankheitsgefühle, die wir Uebelbefinden nennen." Reil, Entwurf einer allgemeinen Pathologie, Halle, 1815, Dritter Band, p. 233.

expected when our objective consciousness, or our perceptions of the phenomenal world, to use German phrases, now however become general—it is not to be expected I say, when this is so much altered from its normal condition, that our internal, or to use again the same sufficiently appropriate phraseology, our subjective consciousness, should remain unaltered. In fact it does not—the change is enormous. If the phenomena of mind are of difficult analysis during health—they are not less so in the course of disease. In many maladies our mental faculties remain comparatively unaffected; in others, and among the rest in fevers, they are sometimes completely overwhelmed. Associations both of feeling and mere intellection, sometimes become jumbled together and perverted in the strangest manner; this confusion at times amounting to absolute delirium.\* Imperfect as are our notions of our corporeal—they have at least advanced beyond our conceptions on mental pathology, whether in continued, or occasional disease of the mind. Further observations on this topic would be here misplaced; the short mention however, which has been taken of it, will surely not be considered superfluous in a matter of such importance, frequently too much neglected.

I have now gone over some of the general features of the pathology of fever. It is to be regretted that our knowledge is so imperfect; unquestionably it will improve in time. The functions of the ganglionic portion of the nervous system are doubtless deranged; but how shall we ascertain the amount of the perversion, when we are actually unacquainted with the nature of these functions during health. The same may be observed of many other processes of the animal economy. I have often stated my belief, that fever at its onset, is unaccompanied in most cases, by any appreciable organic lesion,

\* Etwas stärkere Eindrücke treten auch im Wachen überaus lebhaft hervor, wenn der Organismus krankhaft aufgeregt ist; daher das Deliriren. Meissner, System der Heilkunde, aus den allgemeinsten Naturgesetzen gefolgert. Wien, 1832, p. 99.

The delirium of fever, says Parry, is probably of different kinds in different cases. *Elements of pathology and therapeutics*, p. 338.—*Difficilimam autem est, ob extremam hujus materiæ (delirium) obscuritatem, aut partes affectas assignare, aut diversos laesionum modos, quibus singulae deliriorum species oriuntur.* Gaubius, *Institutiones pathol. med.* § 735.



and I here repeat it.\* There is the strongest grounds for believing, that the derangement is very frequently of a purely functional nature.† In very many cases however, and in the advanced stages of fever, some particular organ, and consequently the functions of that organ, are especially implicated. I do not at all mean to affirm, that what we call functional disorder, may not itself be contingent on organic changes; but all I would say is, that such changes if they exist, are not capable of being appreciated by our senses. But to say that all functional disorder must necessarily be occasioned by organic changes, is much the same as to maintain, that function is only occasioned by organization—a position manifestly untenable however it may lie beyond our power to demonstrate all the sources, upon which the commencement and continuance of individual and general existence depend. All we can say is—that circumstanced as we are in this life, organization is one of the necessary precursors of function and means of continuing it, among a number of other conditions, some of which are nearly or wholly unknown to us. These different functional organic affections, occasion a vast variety in the aspect of fevers. There may be fever with high reaction, and fever with little or none.‡ The reaction may

\* An excellent writer observes—“Les fièvres sont des maladies qui ne se rattachent plus à la lésion d’ un seul organe ou d’ un seul système d’ organes ; elles attestent qu’ il y a lésion simultanée de plusieurs appareils organiques. Plus j’ observe les fièvres, plus je suis affirmé dans l’ opinion que ces affections doivent être distinguées des phlegmasies. Barbier, *Traité élémentaire de matière médicale*, seconde ed. Tome I. p. 540.

† The appearances in fever, as I have heard that very able pathologist, Dr. Macartney, observe, are not those of ordinary inflammation. The opinion of this gentleman is additionally recorded by Barker, in the *Transactions of the King and Queen’s College of Physicians*, vol. II. p. 574. The dissections of persons who have died of fever, as recorded by Bonetus, Valsalva, and Morgagni, amply bear out Andral’s often-repeated statement, not to mention those of others, that the organic lesions discoverable after death in fever, will not, in many cases, account for the violence of the symptoms, nor the fatality of the issue.

‡ Das gelindeste Fieber ist, wo die Thätigkeit des Gefäßsystems nur wenig gesteigert und die des Nervensystems wenig oder gar nicht gesunken ist; bei einem stärkeren Fieber ist die Gefassthätigkeit zwar wenig verändert, aber die Nerventhätigkeit tief gesunken ist; bei dem heftigsten Fieber ist die Gefassthätigkeit auf das höchste gesteigert und die Nerventhätigkeit aufs tiefste gesunken. Die Ursache dieser Verschiedenheit liegt in der Verschiedenheit der inneren und äussern Ursachen

continue throughout the disease, through a great part of it, or it may quickly subside. Various subordinate and temporary states of excitement, will be occasioned by the secondary or primary inflammation of different organs; for it may happen, sometimes from unknown causes, that a febrile epidemic may be associated, almost from the beginning, with pneumonia; the mucous membrane also, of the intestinal canal, may be concurrently affected, as in fever and dysentery, not a very unfrequent complication. As I have just observed—fevers may be characterised by high and continued, or moderate and temporary excitement; or again, there may be almost none from the very beginning. As we are fond of names, this last may be called typhus; but as I have frequently remarked, the forms of fever do not accommodate themselves to the artificial tables of the nosologist, the varieties occurring in nature being infinitely more frequent than what can be possibly included in such limited delineations: in truth they are innumerable. Epidemic fever is commonly of a character presenting moderate excitement; this arises I conceive, principally from collateral circumstances, such as the low corporeal stamina of the persons attacked, which is sometimes owing to their poverty and wretchedness, and sometimes to natural defectiveness; but it also appears, that the poison occasionally eliminated from the bodies of persons in fever, has a tendency to produce a fever of less excitement, even in robust persons, than is found in fever arising from most other causes.\* How this arises I cannot tell; nor shall I enter into the small philosophy of canvassing whether the debility affecting persons under such circumstances, is real or merely seeming. Doubtless it is

des Fiebers. Gmelin, Allgemeine Therapie der Krankheiten des Menschen, Tübingen, 1830, p. 199. The meaning of the last sentence will be complete, if we add to the inward and outward causes of fever, the condition of the individual attacked.—A recent writer admits but two forms of fever—the inflammatory, and the ataxic or typhoid. Vid. Burne's treatise on typhoid, or adynamic fevers.

\* The confused notions entertained by many on the subject of fever with low excitement, will appear by the following extract from Roche et Sanson—"Il nous paraît suffisamment démontré par tout ce que précède, que le typhus consiste dans une infection du sang, laquelle fait naître promptement des inflammations dans les principaux organes, et surtout sur les méninges, le cerveau, et la membrane muqueuse gastro-intestinale, puis sur les poumons et le foie." Nouveaux elemens de pathol. medico-chirurg. Tome cinquième, p. 728.



perfectly real—it is the debility of disease—which, though differently produced from the debility occasioned by starvation, blood-letting, fatigue, and depressing passions, is not the less debility. We are not obliged to give a different name to the weakness produced by each of these causes, because they are not the same cause; if this were so, the principle might be extended to every thing else, and there would be no end to names, too numerous as it is. It is true indeed, that those who treat the debility in every case by the same means, because it is debility, and without regarding the subject and the causes, betray evidence of defective discrimination; let us make the proper distinctions, and we shall lie under no necessity to subject ourselves to an inundation of names—or to commit fatal practical errors. A man labouring under peritoneal inflammation and fever, or loss of blood, may be quickly affected with debility, but the treatment is very different—for this state of the frame may arise and be subdued, I had almost said in a thousand ways. There may be debility of one class of functions, and not of another; here is relative debility. A man in health or disease may possess a more or less powerful muscular apparatus than another, and the remaining functions of his frame, the assimilative, the absorbent, the excretory, and the nervous, may be either more or less vigorous; the mere criterion of muscular strength is a delusive one. The debility from chronic disease, is one kind of debility—that from acute another. The most powerful tonics, and the most nutritious food, may be powerless in the first case, while in the latter, as in the case of a convalescent from fever, sustenance so slight, that a healthy man would starve on it, proves sufficient to create a daily and rapid accession of strength. And to close the subject, a child or a feeble woman will resist with comparative impunity, the invasion of a disease which may overwhelm and destroy a man of herculean strength.

The pathological relations of fever vary according to the organs locally affected, from examples presenting little or no apparent local affection, to others involving numerous and serious organic lesions.\* The organs principally affected, are

\* Very many authors and practitioners, as is well known, look upon fever as a secondary morbid phenomenon. “To me these facts prove, (speaking of the sup-

the brain and spinal marrow, the respiratory apparatus and the intestinal canal: after these, the liver, the spleen, and occasionally, other organs. It is very difficult for us to determine with exactitude, the various forms of these lesions; inflammation however, but generally of a modified character, is one of the most prominent and important; but of this condition itself, how imperfect is our knowledge. When inflammation of any of the membranes of the brain, or any portion of the substance of this vital organ takes place, the process of innervation is seriously affected; but to what extent, it is impossible, in the present state of our knowledge, to ascertain. How are we to associate the various nervous symptoms with the organic changes that may have taken place in the viscus just mentioned, when we find that all these symptoms occasionally occur in the absence of every appreciable local alteration? \* It must be confessed I think, that the vast host of nervous affections to which we are subject, is not merely contingent upon the organic alterations on which so much stress is commonly laid.† Disease after all, is but an abnormal function, and may be associated or not, with different forms of morbid structure. Determination of blood, both venous and arterial, may in all probability exist, produce its peculiar modification of symptoms, and disappear, without perhaps leaving a local trace of its operation. In the so-called congestive fever—a rare form of disease certainly—the blood is said to be unduly accumulated in various organs. In such a case, how great must be the functional oppression of the different viscera, to say nothing of the mechanical changes in the

posed evidence for the existence of local organic lesions in fever,) that fever is secondary, arising from inflammation in one or more organs of the body.” Mills’ Comparative view of fever, p. 76.

\* Andral (Clinique medicale, Tome III. 2d ed. p. 588) affirms with emphasis—“dans les fièvres dites essentielles, il n’y a pas de symptôme nerveux qui ne puisse se manifester sans altération appréciable du cerveau & de ses dépendances.”

† Larrey speaks of a form of fever which he calls *ataxie soporeuse*, which sometimes succeeded the excessive use of Spanish wine or brandy by the French soldiers while in Madrid. These drinks were impregnated with narcotic substances; and (perhaps from habit,) are used by the natives with comparative impunity. In the deaths which ensued upon this disease in which, as the name denotes, there was great cerebral oppression, the author did not find organic lesion in the brain. Mèm. de chirurg. mil. Tome III. p. 209, et seq.



organs affected, from the mere absence or presence of the blood so circumstanced; the coldness of the surface, the feebleness of the pulse, the languor of the capillary circulation, and the impeded action of the heart and arteries.\* There can be no question also, as Broussais and his followers observe, that irritation may be reflected from other viscera upon the brain and its membranes, and reciprocally; but the conditions and laws of this reflected morbid action, are as yet imperfectly known, and though highly interesting, constitute a most intricate branch of pathology. Among these changes may be included what are called metastases; and certainly it is a most remarkable circumstance, that not only diseased functions, but disease of structure, and even various morbid products, may be translated in this way. The class of phenomena styled revulsions, may also with similar observations, be included under the preceding head. Long-continued excitement, from the determination of arterial blood among other causes, will terminate in perverted function; and finally, in lesion of structure, as every pathologist knows. It would seem to me an almost incontrovertible general axiom, that organic changes are the consequence, not the cause of functional disorder. It will be obvious that this only applies to the first instance, since once induced, organic disease may lead to every possible variety of functional derangement, which in its turn, will superinduce other organic changes, and so on, in a circle without end.

So far as the process of innervation is concerned in the various functions of the animal economy—in so far, will these functions become liable to derangement, when the seat of innervation itself—the brain, spinal marrow, and their dependencies, is subjected to functional or organic disease.† But as we do not know how far these are connected in health, it is

\* There is a good example of congestive fever supervening upon convalescence, in Jackson's Sketch of the history and cure of contagious fever, p. 72. Chilliness, collapsed and withered countenance, deep-seated caustic heat, a dry skin, small and frequent pulse—death, the aspect being shrunk and withered as of a blighted or fallen leaf. See also Alison's pathology, p. 166, et seq.

† Some writers occasionally place the seat of fever in the ganglionic system. "Sie sei ihrem Wesen nach auf den Bereich des Ganglien-systems beschränkt und die Gehirnsymptome seien bloss consensuell." Seidlitz; Medicinische Zeitung, dritter Jahrgang, No. 31.

at present *à fortiori*, impossible to pronounce with precision upon their relations in disease. It is a truly remarkable circumstance, that in fever, inflammation will supervene in various viscera, at a period when one would suppose that sufficient activity of the circulation did not exist for the purpose. It is more than probable, that independent of the functional lesions liable to be occasioned by the advent of vitiated blood in the brain, a proneness to various organic alterations will thereby be produced.

It would require a wide field to expatiate on the morbid alterations produced during disease, in the various sympathies exercised by the brain on the different viscera, and reciprocally—as well as by the different divisions of the nervous system, on each other. Suffice to say—in health and disease, the functions of the human frame are bound up into one indissoluble whole, acting and reacting on each other incessantly, and enduring so long as the fabric of being itself endures.

When pulmonary affections are associated with fever, they may be of different forms. That febrile disorders are very frequently complicated with such affections, is unquestionable; but not so invariably I think, as some writers give us to understand. These complications have been divided into those purely bronchial, and inflammation of the parenchyma of the lungs. But the ramifications of the bronchia are so minute, as seemingly to include no inconsiderable portion of the so-called parenchyma itself. Some pathologists are of opinion, that a special bronchitis exists in most fevers, but others entertain a different sentiment; the point does not seem to be determined. The change in the state of the blood has been attributed to the condition of the bronchial lining, and the increased tenacity of the mucus which covers it; but for my own part, I should think that this resulted as much from the aforesaid state of the blood, as that the latter was occasioned by it. Doubtless, when once the bronchial lining is in any degree morbidly affected, it helps to deteriorate the blood still more; and we are not guilty of any great assumption in presuming that the influence of the atmospheric air on this vital fluid, and of the latter on the air, must be in some degree modified by the



state of the membrane through which this influence is exerted—though I think we are at the same time bound to admit, even in this case, that it is only one of the secondary sources of the deterioration in question. But actual pneumonia often ensues in fever, sometimes with such frequency indeed, as to characterize whole epidemics; it is more commonly however, occasional.\* It is always a dangerous, and very often a fatal complication. I have seen very many patients destroyed by it. It is obviously more frequent in cold or changeable, than in warm weather. Medical men are often called in too late to be of use. From time to time, patients are sent to the hospital which I attend, in various stages of this affection, sometimes with extensive hepatization of the lungs. Their ignorant relatives are commonly unaware of their danger, which they have perhaps aggravated, by giving wine or other strong drink: or possibly, they have been unable to obtain early professional aid. The influence of the disability of so large a portion of the respiratory apparatus, to discharge its functions, must be very great: it is in some measure compensated for however, by the greater activity of the remaining portions, when these are comparatively free from disease. Both lungs are sometimes affected, in which case, the worst results are to be apprehended.

It is said, and with much justice, that the inflammations in fever are of a different character from those which take place idiopathically, or without fever in the first instance. Certainly they will not always bear the same activity of treatment. But are we entitled to affirm that the inflammation which superinduces fever, perhaps eventually of a typhoid cast, is always different from the inflammation which often occurs in fever—I should think not. Many are of opinion that the alteration which takes place in the blood, causes the inflammations which occur while it is in this state, to assume a different character; certainly in so far, there will be a differ-

\* See an interesting work, Mann's medical sketches of the campaigns of the United States army, in 1812, 13, 14, page 31. The term, "cold plague," we are told by this author, p. 307, is used in some parts of America to designate epidemic pneumonia; his details of this fatal and singular complaint are both curious and important.

ence—but is it ascertained that there is any other? Different German and English pathologists think, that the blood in consequence of not undergoing the usual changes, acquires a narcotic character;\* but although I would agree with them as to the facts which this term is intended to indicate, I should prefer simply recounting them without using it, as I consider that to assume unnecessarily the existence of an uncertainty, is rather calculated to lead us into error. Assuredly the alterations which the blood undergoes, as also its decrease, a fact which seems to be occasionally overlooked, must occasion marked changes in the processes of innervation, if not a partial suspension of them. The excessive diminution of the mass of the blood, from wounds, venesection and flooding, is known to cause convulsions, loss of vision, hearing, and other nervous phenomena; now in the latter stages of fever, there is not only a great change in the constitution, but also, as I have just observed, a notable diminution in the quantity of the blood. The universal prostration, *Lähmung*, as the Germans expressively term it, which occurs in that form of fever called typhus, must undoubtedly be mainly occasioned, by the excessive vitiation of the vital fluid.

It is wonderful how late pneumonia will occasionally ensue in fever: I have seen it take place on the twentieth day, and prove nearly fatal. It is unaccountable how such a process can be set up in such opposite conditions of the animal economy—robust health, the one extreme—and a state of the lowest and most miserable depression, the other.† Andral, and many other observers as well, have seen fatal pneumonia ensue during convalescence.

Some affection of the intestinal canal is a frequent concomitant of fever; inflammation is certainly not so common as has been recently propagated, for we can hardly give this

\* Göden, Ueber die Natur und Behandlung des Typhus.

† Does the following extract throw any light on the subject? “Some inflammations of the viscera arise during fever, and are very truly said to be produced by the fever, that is, the organ having been predisposed when it is robbed of its due supply of nervous energy, by the derangement of the functions of the brain, its vessels fall into the congested or inflammatory state, and when the cerebral symptoms diminish, if not before, it is found that some organ is affected.” Billing’s First principles of medicine, p. 87.



name to the occasional injected patches found in various parts of the mucous membrane. In typhus however, Bretonneau and very many others affirm, that a specific inflammation of the glands of Peyer and Brunner always exists. We may be allowed to doubt whether or not this inflammation be specific, or so universal as it is said; certain it is however, that it sometimes exists, and that it leads, we may be permitted to conclude, to a high degree of constitutional disturbance, even when terminating favorably. But sometimes the inflammation proceeds to sloughing, ulceration, and occasionally to perforation, peritonitis and death. In rare cases the coats of the mesenteric vessels may give way and occasion fatal hemorrhage. These alterations, which have been well described by Andral, Bright, Bretonneau, and other able pathologists, rarely or never take place, except towards the termination of the ileum, and commencement of the cæcum, although the glands of Peyer and Brunner are not confined to these spots.\* Independent of the affection of the mucous follicles just mentioned, or in conjunction with it, the mucous membrane of the intestinal canal may be inflamed more or less extensively in fever, and by reflection upon the brain and nervous centres generally, become productive of much constitutional distress. Indeed, when we reflect upon the enormous surface of the mucous membrane of the intestinal canal, from the mouth to the anus, amounting probably, on a rough calculation, to an area of between twenty and thirty feet, with its innumerable excretories and absorbents—the variety of fluid and solid substances of which it is the ordinary or occasional vehicle, together with the important functions and sympathies exercised by it—and finally, the extensive organic and functional derangements, to which, in every case of fever, it is more or less subject, we shall not feel surprised that its condition should exercise a powerful influence on the issue of this disease.

\* L'enterite folliculeuse primitive aiguë a constamment pour siege la fin de l'intestin grêle. La valvule ileo-cæcale est la foyer principal de l'affection, qui s'étend de la comme d'un centre en diminuant graduellement au dernier pied, aux deux ou trois derniers pieds de l'intestin grêle. Cruveilhier, Anat. pathol. 7 tième livraison. This enteritis, so called, is depicted in vivid plates in this splendid work.

It is probable that all the great excreting and secreting organs are functionally affected—the liver, kidneys, pancreas and mesenteric glands. When organic disease is superadded, which sometimes occurs to a fatal extent in these climates, the constitutional disturbance will be proportionably increased. The bile, for example—to speak of an excretion, we cannot expect to find healthy—nor is it so in effect, either in quantity or quality. In some warm climates, as for instance, the East Indies, the liver is almost as prone to organic as to functional alterations. It is a curious problem in pathology, why these last-mentioned affections should be more frequent in the region just named, than in the West Indies. It can hardly be questioned, that functional derangement of the spleen, unfortunately ignorant as we still are, in what its functions consist, must prove more or less operative in building up the morbid condition to which we give the title of fever; but is it not tolerably certain, that the total disorganization of this viscus, which is not very rare in fever, must prove incompatible with life?\*

The pancreas, so far as we know, is not very subject to disease; and we can hardly weigh the influence of its derangements. It has not been exactly determined, upon what the retention of urine depends—but when not attended to, it must prove an aggravation; there have even been examples of its not having been discovered before death. The total or partial suppression of urine in one or both kidneys, may possibly in some cases, be occasioned by local causes; it is generally however, admitted to originate in the condition of the brain, and in addition to the original affection, usually proves fatal. Sometimes, all the sphincters are relaxed. The perversion or interruption of the functions of the skin, must prove an important element in the febrile aggregate: generally, it is quite dry—at other times, it is covered with a foul dirty sweat, very different from the healthy ex-

\* Cruveilhier, in the work cited, 2 ième livraison, gives the details of a fatal case of fever, in which the only discoverable organic lesion was excessive splenic inflammation, with purulent formation. In Tweedie's very interesting clinical illustrations of fever, p. 47, there is also mentioned a case of splenic abscess in a fatal case of fever: it is remarkable that in this subject, secondary pleuritis arose from the penetration of the abscess through the diaphragm. How important is the formation of a correct diagnosis!



cretion. One morbid link is united to the rest—all of which are of importance, whether we look at them as precursors or sequents, in the chain of phenomena. The consideration of the magnitude of the dermoid surface, which probably nearly equals that of the mucous membrane of the intestinal canal, helps to give us a more lively conception of the influence of its disordered function. As I have already often remarked with respect to other organs, the structural lesion of the skin, will necessarily superadd still more to the general disorder. The petechial, erysipeloid, and other eruptions, will all have this tendency; erysipelas however, is much less common than petechiæ; but sloughs unfortunately, are not rare, and they not unfrequently form a fatal complication, and always a troublesome one. They are most common in the old and feeble; in a few rare cases, I have seen them in young people. The functional changes in the nerves, blood-vessels, absorbents, and muscles, need not occupy us here; their organic changes have not been well defined, nor to say the truth, are they fully known. Congestion in the capillaries and nervous trunks, is of common occurrence. It may exist in different organs; the same remark may be passed respecting arterial congestion or determination. The effects of hypostasis, which may take place during life, especially in the lungs, and in old subjects, as determined by Piorry, must not be overlooked.\* It does not appear to be determined how far other organs may be similarly affected; but it seems tolerably certain that the lungs are not the only ones. This partial stasis of the blood must probably prove additionally detrimental to its composition. As the respiration is imperfectly performed, the remnant of air remaining in the lungs must prove rather injurious than otherwise. The presence of foul air in the intestinal canal, or meteorism, sometimes exists to a distressing extent.

Whether we agree with those pathologists who derive fever from local organic alteration, or with those who consider that such lesions are the result of a preceding functional, constitutional disturbance, it must be equally admitted, that the alterations in question exercise a powerful influence over the

\* *Mémoire sur la pneumonie hypostatique ou engouement pulmonaire.* This author mentions a fatal case of hypostatic pneumonia, in his *Clinique medicale*, p. 8.

issue of the disease. Of all these, inflammation is unquestionably the most important, whether we consider the frequency of its occurrence, the number of organs that it may involve, or the fatal issue to which it so often leads. The liability of some organs over others, to this pathological condition, hinges on circumstances not always easy to appreciate. Something will depend on the occupations, mode of life, clothing, and habits of exposure, of the individual; also, his general constitution, and the healthy or unhealthy condition of his different organs; likewise, the period of the year—pulmonary affections for example, being more frequent in winter and spring, and abdominal ones in summer and autumn: but circumstances arise in the course of fever, which will originate inflammation, and with which we are unhappily very slightly or not at all acquainted. Pneumonia, to give an instance, will sometimes invade a person in the course of fever, when it is apparently impossible to divine the reason. The high importance of inflammation is indeed, tacitly or openly admitted by all, although it is highly unfortunate that people in many points, are far from being agreed, as to what it consists in.—We can hardly forbear our astonishment, when we observe how men whose lives, and the highest exertions of whose intellects, have been devoted to the incessant cultivation of medical science, differ fundamentally from each other, as to the absence or presence of the state in question. Some affirm strenuously, that fever is an inflammation of the brain;\* others, that such inflammation is only occasionally contingent on fever; while again, we are informed that fever is but a name for inflammation of the mucous membrane of the stomach and bowels;† which is again denied in its turn. It is highly to be regretted, that we cannot always determine with certainty, the question of priority, as to functional and organic derangement; if we could, then would disputation necessarily cease. It is however a mitigation of these circumstances, when we consider, that almost all parties virtually admit the occurrence of the same phenomena, to which however, they firmly persist in giving different names; an occur-

\* Clutterbuck's Inquiry into the nature and seat of fever, p. 20.

† Broussais, Examen, and Phlegmasies chroniques; passim.



rence which we can hardly wonder at, when we consider the acrimonious feelings apt to be engendered by controversy. This affair of names however, is not a matter of such indifference as some might suppose. “It is merely a dispute about words,” some will say; but names exert a great influence in medicine as well as in other things, and our practice is very apt to be regulated by them; doubtless, in many cases too much so. Until pathologists come to a more unanimous issue on these points, we may be permitted to maintain a position which few will be inclined to dispute—namely, that the danger of fever, and the intricacy of its phenomena, are greatly increased by the number and intensity of the local complications, among which inflammation holds the first rank; indeed, fevers will too often occur, in which the viscera of the head, thorax, and abdomen, are conjointly affected. That the essence of fever however, does not consist in inflammation, is proved by the diversity of the seats assigned by different observers, and by the unquestionable fact, that numerous cases of fever occur, some of which are fatal ones, without any such complication, and very frequently without any important tangible organic affection of any description.

Examinations after death, although they can never reveal the origin of fever, nor the sources of the phenomena exhibited during its course, will nevertheless, lay open to observation, the seat and form of the different lesions with which it is so frequently complicated, and in many cases, enable us to discover the cause of death when it depends on these. Morbid anatomy therefore, is of the utmost importance, to enable us to ascertain the connexion between local affections, and the symptoms which indicate them in all their stages.\* But as all disease, fever included, is an act of the organization—we cannot expect to trace the causes and the nature of disease in the condition of the organs alone, even in cases attended with local complications, much less in those instances in which such complications, if they exist at all, are not

\* *Arctum est vinculum, quo anatomia pathologica cum ipsa pathologia continetur: nam corporis nostri mutationes organicas recenset, quae morbis effectae saepenumero novorum morborum causae fiunt. Haenel, Hodegetice medica, Lipsiæ, 1831, p. 59.*

visible.\* Independent of the desirableness of improving this branch of science, it is highly expedient for every reason, that all practitioners should make themselves conversant with the most frequent and most important lesions at least, because description alone is inadequate to communicate the proper degree of practical knowledge, and because it is impossible in a manner, for a man to treat with energy and precision the diseases in which these lesions occur, unless previously well acquainted with them. I have already stated, that some pathologists are of opinion, that all diseases were the result of previous organic lesion, whether visible or not, thereby virtually doing away with the existence of functional diseases, as a class by themselves, independent of local lesion. This may be true or it may not, for we can only give conjecture on the subject; but as I have already stated, the division generally adopted, and which I think the best, is that of dividing diseases into those of function, those of structure, and those in which both structure and function are involved, accordingly as local lesions can be found or not, to which they may be referred. To reason otherwise on this matter, is I conceive, to fall into special pleading, which we can hardly indulge in, without running some risk of mis-stating or misinterpreting the phenomena of nature. After all, morbid anatomy will furnish us with even less insight into the nature of disease, than sound anatomy into the physiology of healthy action—yet, for the reasons above stated, not to mention others, the one is no less important as a branch of study than the other—and it is extremely to be regretted, that the almost impracticable prejudices existing in this country, against the examination of the bodies of deceased persons, should be so extensive. Before entering into the question of the individual lesions which occur in fever, I wish to observe, that those who engage in the details of morbid anatomy, must be prepared to encounter three difficulties—namely, the absence of the alterations which generally accompany certain symptoms—the presence of alterations

\* La grande erreur de l'école anatomique, c'est de vouloir toujours subordonner la maladie, acte vital, réaction anormale de l'organisme, aux alterations de texture de nos organes, que ne sont que des résultats éventuels de cette réaction anormale. *Revue médicale*, Février, 1832, p. 260.



indicated by no symptoms, or else imperfect and equivocal ones—and finally, the difficulty of knowing when to associate and when to avoid doing so, given symptoms with given alterations.\* These however, strictly speaking, are questions of diagnosis. Morbid lesions of various kinds, the result of previous diseased action, will frequently be found; and it requires some acquaintance with the products of disease, to know when to distinguish them from recent formations.† It is obvious, that to pursue these researches with fruit, requires a minute acquaintance, not only with the morbid products of disease, but with the various appearances which the organs may present in health.‡

After death, the brain is sometimes found slightly injected, and occasionally pale—in other cases, it may be unusually hard or soft; but frequently, nothing peculiar is to be observed. The veins and sinuses are occasionally congested with blood. The membranes are sometimes slightly injected, and there is in many cases a greater or less effusion of serum; but this is a common circumstance after death, as all who are engaged in anatomical investigations are aware. In rare cases, a little pus or sero-purulent fluid is discovered; sometimes, there is a gelatinous effusion—and at others, partial adhesions of the membranes. So much, concisely speaking, for the changes presented after death by the brain.§ Of the spinal

\* Andral, Clinique med. Tome III. gives a good account of the post-mortem appearances in fever; our excellent English monograph writers also abound with numerous and valuable details on the subject.

† In an admirable series of observations on the epidemic fever of Ireland, by Dr. Percival of Bath, he declares that antecedent visceral derangement is commonly found to exist in most fatal cases. He justly attributes these to the wants, the hardships, and irregular lives of the poor victims. Vid. Transact. of the King and Queen's College of Physicians of Ireland, vol. I. p. 271.

‡ The amount of organic lesion which the frame is capable of contending against, is imperfectly known. The capability of recovering from such, must of course be relative. The appreciation of such important particulars as these, as well as the actual amount of organic lesion which we are in any case capable of resisting, must be determined, partly by morbid anatomy, and partly by ordinary diagnosis.

§ Speaking of the post-mortem changes observed in the brain after fever, Burserius observes—"quæque plerumque consistunt vel in apostematibus cerebri, vel in lymphæ gelatinosæ inter duram, et piam meningem collectione, vel in sero sive limpido, sive crasso, turbido, imo etiam sanguineo circa cerebrum stagnante, aut in ejus ventriculos effuso, vel demum in nimia vasorum sanguineorum, quibus pia mater,

marrow, nothing particular is on record. As for the fluid seen flowing out—it is a matter of almost universal occurrence after death, being, in fact, a normal condition. The details respecting the apparatus of the sympathetic nerves, are still less satisfactory. Andral has seen the semilunar ganglions red, but does not venture to assert that it was a mark of disease; and I fully agree with this writer, when he affirms that the state of the nervous centres after death, does not, in the great majority of cases, account for their functional derangement during life. We have been stuffed to satiety, with the specious details—in too many cases, really any thing but satisfactory, of morbid anatomy; and it is refreshing when such a first-rate pathologist assigns them their just value. In truth, the appearances after death in the brain, will not, as has often been asserted, explain the phenomena of disease, any more than they will those of life. The language of morbid anatomy is not too definite—and why relate too minutely, the details of phenomena, which, however important, must be witnessed, to be known and appreciated? The morbid varieties observed in the respiratory organs, though highly important, are not very numerous; they are however, frequently observed, and constitute, along with other alterations, a frequent cause of death. They consist of the ordinary results of inflammation and congestion. The bronchial lining is more or less red, accompanied with a considerable effusion of mucus. Armstrong affirms that typhus is always attended with a special bronchitis; indeed he insists so much on it, that we might almost conclude that he looks upon it as the leading cause of typhus fever; other pathologists certainly do not support him in the lengths to which he has gone in this respect. The lungs are frequently, as if gorged with blood or serum—and hepatization, the result of pneumonia, is not an uncommon result. I have often seen it more or less extensive, in the lungs of those who died of fever. Andral speaks of a lesion

*et cerebrum ipsum abundat.*” Numerous details on the morbid appearances observed in the brain after death, will be found in the voluminous, yet valuable collection of Bonetus; vid. *Sepulchretum, sive Anatomia, practica*, Lugduni 1700, lib. I. § 1—7. also lib. IV. et ultimus, § 1. Vid. likewise, Morgagni, *de sed. et caus. morb.* Epist. VI.



frequently to be met with, in which the pulmonary parenchyma is injected with blood, as in hepatization, but more like softened spleen.\* The cavity, as it is called, of the pleura, in some fatal cases, contains a reddish effusion; it does not appear that this is any consequence of inflammation; the pleura besides, seldom exhibits any evidence of it. The pericardium occasionally presents a serous effusion of a ruddy aspect—and the same may be remarked of the peritoneum. The liver is not often organically affected in fever—and when it is so, we may perhaps conclude that it is seldom connected with the disease. As to the bile, it is sometimes altered, as to quality and quantity; but we can hardly connect any of the phenomena of the disease with its appearances, or those of the liver, a few rare cases excepted. The urinary apparatus seldom presents organic lesion. The spleen is not rarely soft and voluminous—more frequently, Andral remarks, than in any other disease; and Louis, also is of opinion, that this viscus is more frequently affected than any other in fever.† The heart seldom presents any lesion; sometimes however, its internal parieties, and those of the large vessels, are redder than usual: but no peculiar conclusion can be drawn from these circumstances. Little need be said in this place, respecting the blood; its alterations have been already spoken of. The extreme liquidity and other changes sometimes presented by this vital fluid, are not peculiar to fever.

The alterations which occur in the intestinal canal, have received a large share of attention during late years, particularly from the strenuous attempts which have been made to localize the seat of fever in this viscus; and which attempts, are consequently based upon the affirmation of the universal presence of local affection.‡ It is quite certain however, as

\* Clinique medicale, Tome III. p. 570.

† Louis, Recherches sur la maladie connue sous les noms de gastro-énerite, fièvre putride, adynamique, etc.

‡ Broussais heads one of his cases thus—"Gastrite aiguë simulant le catarrhe et la fièvre ataxique continue." Yet in a note appended to this case in a subsequent edition, he adds—"Elle la simulait si bien que c'était réellement la même maladie." Histoire des phlegmasies chron. quatrième éd. Tome II. p. 488. Another case is headed thus—"Gastrite aiguë simulant la fièvre ataxique adynamique." Id. Tome III. p. 120.

appears from the avowal of the best pathologists, that very many cases of the disease above-mentioned, occur without the slightest perceivable organic alteration adequate to account for them. If such a circumstance prove that fever is not owing to a gastro-enteritis, it also shows as strongly, in my opinion, that a follicular exanthem, so styled, is not the cause either. It has been said however, that as erysipelas is sometimes found to leave little or no trace on the skin after death, so may the organic evidence of inflammation of the mucous membrane, also disappear in like circumstances. I do not think that great attention is to be attached to this explanation, though it should not be overlooked—great consideration nevertheless, is due to those who pointed out the frequent, and too generally neglected lesions of the intestinal canal, such as they occur in fever.\* The great object, is to obtain as large a list of the functional and organic phenomena as possible; but to assign the source and to demonstrate the order of causation in the disease is I fear, as yet beyond our grasp, if it may ever prove otherwise. The transient appearances produced after death, by the passage of blood or bile, or the traces of the incipient dissolution of the frame, are hardly worthy of notice, except to avoid confounding them with the changes occurring in life. The mucous membrane is occasionally, here and there, more or less injected; it sometimes also, undergoes the change which is called *ramollissement*, or softening. On the whole, the organic changes of the stomach, are not considerable in fever. The small intestines, especially towards the end of the ileum, as I have said before, present frequent traces of disease. Of these, the most remarkable is that peculiar affection, or exanthem as it is styled, of the follicles, which has received the name of *dothinenteritis*. The agminated and the isolated crypts or follicles, or those of Peyer and Brunner, as they are sometimes called, may both prove the

\* Ræderer and Wagler in their celebrated account of the epidemic fever, or mucous disease, as they call it, in 1760—1, at Gottingen; Sarcone in his description of the epidemic at Naples, in 1764; Prost in his *Medicine enlightened by post-mortem examinations*, in 1804; and latterly, Broussais and his numerous followers, have done much to point out the occurrence of these lesions, albeit some of them consider such the cause of fever. It is remarkable that an able writer, Andral, should arrange as he does, febrile diseases under those of the intestinal canal.



subjects of this phenomenon ; the first however, are more frequently affected than the latter. When they have undergone this morbid change, they rise above the surface of the surrounding mucous membrane, than which they are sometimes softer, and sometimes harder ; the mucous membrane itself may or may not be otherwise affected. Occasionally, they occur in the cæcum in plates, as in the ileum—but isolated in the rest of the large intestines. Sometimes, the diseased follicles may be traced individually in the plates—at others, they are indistinguishable from each other.\* They may proceed to resolution, or they may form eschars, which falling off, display ulcers, varying in extent, from the size of a single follicle, to that of a whole plate ; in the former case, they are often exactly round. These ulcers sometimes destroy the mucous membrane to the extent of many inches, not only in the ileum, but in the cæcum. At other times, they are few and small. The ulcers may cicatrize if the patient survive ; in a few cases however, they lead to perforations, which permitting the effusion of the contents of the intestines into the cavity of the peritoneum, cause inflammation and death. This result does not occur, except in advanced stages of the disease. This exanthem, if we may call it so, does not present the regular phases seen in small-pox ; it may exist during the greater portion of the disease, and even after the fever has terminated. After what I have said, I need hardly repeat again, that together with its results, it is only an occasional contingency in fever, and seemingly more frequent on the continent than in this country—from what cause however, if it be thus, I do not pretend to say. They are rarely seen in old men ; these however, when seized with fever, present the same general symptoms with young persons in whom this phenomenon occurs. Independent however, of the unquestionable fact, that this exanthem, as some call it, is far from invariable in fever—those who most warmly contend for its being the cause of the dis-

\* Some French writers consider this affection of the follicles, as one of an inflammatory nature—a dothinerteritis ; others simply style it a special alteration, without deciding upon its nature : among the latter is M. Louis. For some useful notes and observations on this point, consult Otto, *Handbuch der pathologischen Anatomie*, § 53 ; or, South's excellent translation.

ease, admit that it has been detected in phthisis and scarlatina.\* The mesenteric glands always undergo a morbid alteration, corresponding to the severity of the exanthem. They enlarge in size, grow soft and discoloured—and sometimes contain pus. As to the contents of the intestinal tube, a collection of gas, occasionally amounting to meteorism, is sometimes seen in bad fevers; worms are a matter of common observation—also vitiated bile and blood.

The most important alterations that are found after fever, have now been detailed; many other occasional ones, are mentioned however, in the numerous treatises which have been published on the subject, in our own and other languages. I need hardly remind the reader once for all, that none of these lesions reveal the source of fever; and that all those which do occur, can only be considered in the light of occasional and contingent occurrences.

The diagnostic art is one of the most difficult, and at the same time, most important, in the whole circle of medical science.† Unless we are able to analyze the phenomena presented by the individual cases of disease which come before us, we are reduced to the pitiable necessity of depending on the notions which we have previously attached to the mere name, which at best, can prove no more than a correct generalization of the class of which the disease is a specimen, and which consequently, can never accurately correspond with individual cases. Many persons in time acquire a kind of tact or expertness in the detection of disease, without always having a very precise idea of the differences which come before them. General ability however, with close and continued observation, will communicate as great a familiarity

\* Piorry, Clin. med. p. 191, gives an instance in which this peculiar affection of the mucous follicles, was recognized in the case of a woman of sixty, who died after two days' illness at the Salpêtrière, of a strangulated umbilical hernia.—“On trouva, (he observes,) les plaques de Peyer, dans la portion étranglée de l'iléon, tuméfiées et enflammées comme dans l'entérite typhoïde,” etc. He also adds; “Dans d'autres cas j'avais constaté de faits analogues.”

† La diagnostica essendo la vera scienza fondamentale della clinica—Brera, prolegomeni clinici, p. 94. Ballonius likewise observes—“Antequam de remediis statuatur, primum constare oportet quis morbus, et quæ morbi causa; alioquin inutilis opera, inutile consilium.”



with the varieties of disease, as the same means can procure, when applied to any other class of the phenomena of nature. The knowledge obtained by the senses can never be properly communicated at second-hand; we must see and feel, or in other words, educate our senses for ourselves. The experience of others however, will enable us to consult nature with more advantage, and perfect our acquirements.\* An exclusive dependence however, on our own experience, or that of others, is equally vain and deceptive—the one the mere knowledge of the bookworm, the other the lore of the nurse.† Our impressions should be continually renewed lest we forget them, and corrected and augmented by comparison with those of others, through the medium of books and personal intercourse. The young man is apt to glorify himself on his talents, the old man on his experience—but in matters of this kind, age is relative.‡ Years do not always give experience, and talent without observation is absurd.§ Constant observation and

\* *Longa demum experientia medici didicerunt, magna nomina non nimis venerari, et opinionem auctoritatem, veræ scientiæ semper inimicam, spernere*—Gregory, *Conspectus Medicinæ Theoreticæ*, ed. septima. Edinburgi, 1824, præfatio, p. 32.

Alius error fluit ex nimia reverentia, et quasi adoratione intellectus humani; unde homines abduxere se a contemplatione naturæ atque ab experientia, in propriis meditationibus et ingenii commentis susque deque volutantes. Bacon, *De dignitate et augment. scientiar.* lib. I.—die Grundsätze der Heilkunst grösstentheils subjectiv sind, und einzig? durch keinen Unterricht objectiv gemacht werden können, sondern blos aus eigener Erfahrung geschöpft werden müssen. Treviranus, *Biologie*, Erster Band, p. 129.

† Sydenham has justly denounced the empiric on the one hand, and the mere theoretical sciolist on the other—while he asserts, that together they destroy more than diseases would, if left to themselves—“quasi junctis viribus majorem edunt stragem, quam ederent morbi, eorum destituti auxilio.” *Op. om.* Epistola I. responsoria, amplis. doct. viro, R. Brady.

‡ L'uso è invalso di chiamare in consulto i medici d'età avanzata, riputandosi questa la più certa guarentigia di una buona esperienza. Senza dubbio l'età fortificata da lunga serie di non equivoci successi merita grande venerazione. Ma bilanciandosi esattamente quanto col volgere degli anni il massimo numero de' medici guadagna in esperienza e perde in sapienza—Brera, *Prolegomeni clinici*, p. 102.

§ Bischoff in his “*Klinische Denkwürdigkeiten*,” justly remarks, that medicine is the daughter of experience; but then it is the experience of ages, not of individuals alone. A very able writer thus observes—“The vulgar of all ranks need to be warned; first, that *time* alone does not constitute experience; so that many years may have passed over a man's head without his even having had the same opportunities of acquiring it as another, much younger.” *Whately's rhetoric*, p. 210.

incessant comparison make the physician. Time and arduous labour, are both necessary—one without the other is vain. If we do not go on, we are sure to recede; it is easier however, to acquire a certain sum of knowledge than to surpass it.—We are generally defective beings, and too often drawn aside by distractions so numerous, as to leave us little time for the preservation or the augmentation of our knowledge. Medical skill should be measured as in other cases, by the union, and the union alone, of talent, application, and time. Any one of these, without the rest, is insufficient to make an able physician; and by these alone, as is the case with the votaries of other sciences, should his professional worth and standing be measured. Observation is continually discovering fresh facts. The additions made to medical science by individuals, have been by no means in the ratio alone, of the mere duration of their experience. The most varied phenomena of nature, pass by some eyes unnoticed, while those of others are full of intense observation. I make these remarks as a kind of counterpoise to the vanity of the young, and the egotism of the old. I only wish to add my mite of demonstration, and to show that medicine, like every other science, is to be acquired in the ratio of the talent, time, and labour, spent in its pursuit.\* Opportunities occur every where, for every where

\* The following observations embody so correctly the desiderata necessary in the medical observer, that I cannot deprive myself the pleasure of quoting them—"Der Beobachter am Krankenbette muss mit ungetrübtem philosophischem Blicke sehen, frey von Vorurtheil und Systemsucht seyn, durch keinen falschen Schimmer vermeinter Entdeckungen geblendet, den Gang der Natur mit ruhigem Gemüthe unermüdet verfolgen; er muss das Talent individualisiren, und die seltene Gabe besitzen, das Aenliche oder die Verschiedenheit in den Erscheinungen, so wie das Eigenthümliche schnell aufzufassen, und zu vergleichen; denn hier liegt der Geist seiner Kunst, und die praktische Gewandtheit. Der Werth des Arztes wird also nicht durch die Zahl seiner Beobachtungen, nicht durch die Dauer seines Wirkens bestimmt; denn nicht in der Beobachtung allein liegt das Geheimniss; die Seele muss den Gegenstand auffassen, und der Heilkünstler mit seiner Wissenschaft die Weisheit verbinden. Das Genie allein macht ihn zum Beförderer der Wahrheit und Erkenntniss." *Collectanea medica.*—To which I may be permitted to add from Puchelt; "Die Anlagen, welche die Medicin als Wissenschaft voraussetzt, unterscheiden sich von denen, welche zur Erlernung andrer Wissenschaft nothwendig sind, nicht sehr auffallend. Aufmerksamkeit, treues Gedächtniss, lebhaft, jedoch geordnete Phantasie, die Fähigkeit deutliche Begriffe, gesunde Urtheile und richtige Schlüsse zu bilden, überhaupt aber die Verbindung der Fähigkeit zu empirischen, abstracten und speculativen Arbeiten sind die Wichtigsten Anlagen, welche die



there are books and endless disease. Let us never forget that Bichat, whose name cannot soon perish, died before he had attained his thirty-second year. \*

After what I have already said, the details on the subject of diagnosis, need not be very copious. The existence of fever itself, will be determined by the presence of the signs already pointed out. To draw a parallel between the different diseases with which fever is sometimes confounded, would require details that I cannot here enter into, without trespassing the bounds which I have proposed to myself. An irritative fever sometimes arises from punctured wounds, in some cases combined with a poisonous matter, as occasionally happens from dissection. It is well described by Butter and Travers, as well as by various writers in our periodicals.† The pathology of this severe and frequently fatal form of disease, requires many additions; but the investigation does not come conveniently within the scope of my subject. It is remarkable, as connected with this question, that the injection of putrid matter into the veins of animals, as I have had occasion to mention before, produces a disease in many respects similar. The remittent of children should find a place I conceive, among the diseases of the abdomen. A kind of confusion has taken place between the diagnosis of this disease, and that of hydrocephalus and common fever. It is no doubt, frequently difficult, especially in scrophulous subjects, to distinguish whether fever, or the meningitis preceding hydrocephalus, is the primary disease.‡ Perhaps in

medizinische Wissenschaft erfordert. Zu diesen muss aber ein sehr beharrlicher Fleiss und ein lebhaftes Interesse für den Gegenstand selbst hinzukommen, wenn die Ausbildung gedeihen soll." Umriss der allgemeinen Gesundheits—Krankheits und Heilungslehre, Heidelberg, 1826, Erster Theil, p. 15. For some admirable observations on this head, I may refer the reader to two essays of much elegance. Vid. Baker. *Opuscula medica*, Lond. 1771, opusc. III. et IV.

\* Beclard, *vie de Bichat*.

† Butter's remarks on irritative fever, Devonport, 1825.

The remarks of this writer on the Plymouth dock-yard disease, as it was called, are very interesting. This form of fever was groundlessly laid to the charge of the African timber used in the yard. It may perhaps, prove a matter of some interest to state, that I have seen hundreds of men, both black and white, employed for months on the coast of Africa, hauling and hewing this timber, without such a result ever occurring.

Traver's *Inquiry into constitutional irritation*, 2d ed. Lond. 1827, p. 214, et seq.

‡ The reader who is desirous of adding to his information on this subject, will do well to consult the learned and unequalled work of Gölis, *Praktische Abhandlungen*

some young subjects, this meningitis is one of the results of ordinary fever, but certainly, so far as my own observation extends, not a common one. In young subjects, as in adults, we should be awake to every possible complication, and not take our ideas of disease, merely from preconceived notions and descriptions, to the neglect of the great book of nature, the pages of which lie ever open for perusal before us. In healthy children, fever is generally a mild disease, especially when they have not been over-fed. In scrofulous and cachectic subjects, and where there is a tendency to abdominal disease, febrile complaints are more difficult to deal with. I think however, that in children in whom mesenteric and other glandular affections of a morbid nature, are highly developed, pure fever, or idiopathic fever, so called, rarely occurs. Some pathologists maintain puerperal fever to be merely a typhus attacking puerperal females. Perhaps they are not exempt from typhus, but the puerperal fever is frequently at least, even a more fatal disease. It is apparently more readily communicable to the subjects liable to its infliction, and seems always attended with a peculiar inflammatory affection of the uterus and peritoneal coat, a phenomenon which I had occasional opportunities of witnessing, when this violent disease prevailed in the Dublin lying-in hospital, while an inmate of that admirable institution. Whether the puerperal condition alone is adequate to account for the peculiar features of this terrible disease, does not afford room for inquiry in this place.\* The question,

über die vorzüglicheren Krankheiten des kindlichen Alters, zweyte Auflage, Wien, 1820, in which the diagnostic marks of this murderous disease (mörderischen Krankheit, as he justly calls it) are minutely and faithfully exposed. I also beg to refer to Billard, *Traité des maladies des enfans nouveau-nés et à la mamelle*, deuxième éd. p. 631, for his description of *méningite cérébrale*, or acute hydrocephalus. See likewise, Capuron, *Maladies des enfans*, seconde éd. p. 487, for a description of this disease, which he introduces with the title of “*fièvre ataxique ou nerveuse*,” showing pretty clearly, the hesitation of his mind on the subject. Our numerous and excellent English authorities are too well known to require to be minutely particularized in this place. Dr. Abercrombie hazards an ingenious conjecture as to the possibility of the occasional production of effusion on the brain in children, from *ischuria renalis*. Vid. *Ed. Med. and Surg. Journ.* vol. XVII. p. 220.

\* Notwithstanding so many able writers have since employed their pens on the subject, the conclusions which Hulme arrived at, as to the inflammatory nature of puerperal fever, upwards of half a century ago, approach very closely to those now held on the subject. Vid. Hulme, *On the treatment of puerperal fever*, Lond. 1772, p. 147, et seq.



whether the various so-called varieties of continued fever are generally distinct, has been already disposed of in the negative. No two cases of fever are exactly alike; and as the varieties occurring in nature, neither fully correspond to, nor are always included in the tables of the nosologists, however detailed these may be, it is needless to bind oneself to their distinctions.\*

Congestion is a frequent feature in fever, but it is rarely so characteristic I conceive, as to entitle us to erect congestive fevers into a class. I have frequently witnessed congestion and a cold surface in old subjects, in the advanced stages of fever, but I never saw a case of this disease wholly corresponding with the congestive fever of Armstrong and others.† Of fever with much arterial excitement, fever with temporary arterial excitement, and fever with little or none, enough has been already said: they will be distinguishable from each other by a glance of the practised observer. Of all the forms, fever with more or less excitement at first, afterwards subsiding, is the most common.‡ Fever with high excitement is frequent in the plethoric and robust—and fever with little or no general excitement, or the so-called typhus, is most commonly met with in the timid, the weak, the ill-fed, and the over-worked in mind and body—and hence, it is so frequently epidemic.

\* As Rush observes, there is but one continued fever, generally speaking, which varies incessantly, and is therefore incapable of being submitted to the accurate distinctions of classes and orders, as plants and animals, which are the same to-day as they were a thousand years ago. *Med. inquiries*, vol. IV. p. 149. Sydenham also, in more than one place, after admitting that all fevers have common symptoms, goes on to add, that it is very difficult, although not impossible, to ascertain the individual forms of fever; “*Difficile id quidem esse, at non plane impossibile*,” *Op.* § 5, cap. VI. What would this justly distinguished character have said, could he have foreseen the numerous divisions into which fevers have been split since his time. Reil also observes that nosologists constantly turn symptoms into diseases—“*Die Nosologen verwechseln immerhin Symptome mit Krankheiten*.” *Entwurf einer allgemeinen Pathologie*, dritter Band, p. 246. We busy ourselves, says he, with abstract diseases—“*Wir beschäftigen uns in der Nosologie mit abstracten Krankheiten*, also mit Begriffen, die als solche nicht erscheinen.” *Id.* Zweiter Band, p. 5.

† A similar avowal is made by Marsh in his observations on the latent period of fever infection. *Dublin hospital reports*, vol. IV. p. 491.

‡ *Febris cum charactero septico originaria, protopathica est rarissima; in longe plurimis casibus est secundaria, deuteropathica; non raro evolvitur e febris inflammatoria, imprimis in typho contagioso, qui sub exordio characterem inflammatorium habet, sub ulteriori decursu citius vel tardius in septicum degenerat.* Bene, *Elementa med. pract.* Pestini, 1833, Tom. I. p. 86.

All these forms of fever, it is most important to observe, may, or may not be complicated with inflammation and other more or less serious local derangements.\*

It too frequently occurs that inflammations of various kinds, are mistaken for common fever, which is about as serious an error as that of overlooking the presence of inflammation in fever itself.† If the morbid condition were detected in the first instance, the error would be of small importance; but there are unfortunately some people who overlook local complications in fever, and to whom an inflammation ceases to be an inflammation when it is called a fever. I am almost afraid to think of the mischief which arises from this source. I have known pneumonia and pleuritis treated as fevers, not only without the necessary abstraction of blood or other antiphlogistic treatment, but with the addition of stimuli. One inflammation is sometimes mistaken for another; pleuritis is frequently confounded with pneumonia, and conversely. Among the poor and other persons unacquainted with medical science, incredible mischief often takes place from ignorance on these points. Acute inflammation, whether occurring primarily or secondarily to fever, is commonly overlooked, and the patient perhaps drenched with alcoholic drinks or quack medicines—or at all events, the disease is allowed to proceed unheeded to an incontrollable height. It is needless to observe, that the practitioner who would avoid committing such serious errors, should be minutely acquainted with the form and symptoms of every inflammation, whether latent or patent—simple or complicated. Surely every one ought to be able to distinguish ordinary fever from peritonitis, enteritis, hepatitis, psoriasis,

\* It is interesting to observe the sagacity of our great Sydenham, combating the defective pathology and diagnosis of his time, and conjecturing with wonderful clear-sightedness, the co-existence of inflammatory lesions in vital parts; “*Inflammationis cujusdam respectu circa partes spirituales delitescens.*” *Op.* § 2, cap. II. also § 5, cap. II.

† Are we to concur with Acerbi, who says that cases may occur in which no man is able to say which is the prior occurrence, the inflammation or the fever?—Perhaps so. “*Fortunato e sapientissimo quel medico che imparasse a distinguere francamente ed in ogni caso la febbre primaria da quella che dipende da flogosi, o d’altra infermità dei visceri, perchè egli potrebbe valersi con sommo vantaggio dell’ uno e dell’ altro metodo secondo l’ opportunità, ma io non lo vidi ancora quest’uomo nè credo che vi sia.*” *Annotazioni di medicina practica, Milano, 1819, p. 55.*



pleuritis, pneumonia, laryngitis, meningitis, and phrenitis; traumatic, and irritative inflammation, mania, acute rheumatism, and the exanthemata. In two or three instances, I have seen mania with excitement taken for fever; and on one occasion, I witnessed a case of hectic, which, from the inattention of the observer, was considered one of common typhus. It is needless to enlarge on similar errors; every medical man should exert his utmost to avoid them. This, he will best accomplish, by an accurate knowledge of diagnosis, obtained at the bed-side of the sick; by frequent post-mortem examinations; and by the assiduous perusal of the best authors.\* The noble science of pathological analysis, is not to be acquired without time and trouble; but its possession once obtained, is invaluable, and amply repays the proficient for all his labour.† Can we require stronger inducements to pursue and possess it than the well-being of those who come under our care, our personal reputation, and the honour of the profession to which we belong.

It has long been well known, as I must often observe, that the character of inflammation in fever, differs from that of inflammation in which the fever is an epiphenomenon. The inflammation supervening upon fever however, every thing else alike, is more easily subdued. It may seize upon a given organ either at an early stage of the fever, at a far advanced one, or perhaps not until the period of convalescence has set in. It may take place during a state of very high excitement, or perhaps when the prostration is so great that we can hardly believe the co-existence of inflammation possible. While this morbid condition is too often overlooked, I am also afraid that its existence has been decided upon, when

\* Une connoissance profonde des signes des maladies est indispensable à celui qui se destine à pratiquer l'art de guérir. Laudré Beauvais, *Semiotique*, 3 me ed. Paris, 1818, p. 2. Diagnosis is the foundation of medical practice. Hall on diagnosis, p. 1.

† The concurring improvement and rapid progress of a rational diagnosis in France, Germany, Italy, the British dominions, and the Americas, afford a delightful sense of satisfaction to every lover of medical science. It would be invidious to mention a few out of the bright catalogue of names of those who have distinguished themselves; but independent of our honoured and honourable foreign brethren, we have many among us whose contributions to our art will bear down their names to a grateful posterity.

there was merely evidence of general excitement and local determination of blood. Certain nervous phenomena have been considered to point at inflammation, but often erroneously. The recovery of patients after bleeding and purgatives, has been often looked upon as justifying a diagnosis indicative of inflammation; but the powers of the human frame are sometimes wonderful, and we have every reason to believe that patients very frequently recover, when in one set of cases, they have been bled unnecessarily—and in others, stuffed with superfluous wine and cordials. Human skill will not always suffice perhaps, to discriminate in difficult cases; but a sound diagnosis, based upon the best principles of pathology, aided by collateral science, together with a searching investigation, will assuredly, best enable us to obtain the greatest amount of certainty which circumstances permit.\*

There is sometimes much difficulty in determining the nature and extent of inflammation in fever, particularly in the bowels. What this difficulty depends on, it is often very hard to say. Perhaps the alteration in the constitution of the blood, which in its turn, must change and pervert the action of the brain and nervous system generally, renders the cerebral and ganglionic apparatus less capable of evincing the more striking forms of diseased sympathetic action.† The sense of pain is lessened or abolished, owing to the state of the brain and spinal nerves; the other phenomena of life depending on the sympathetic nerves, are not performed in the usual manner, and consequently, the usual evidence of diseased action is not afforded. That this state of the blood however, is produced by the condition of the bronchia solely or principally, is what

\* It is evidently of greater importance, if we were necessitated to make a choice, that the diagnosis should be correct, rather than the mere terminology: we might err as to the name, but would be correct as to the fact. Bonetus for instance, frequently confounds fever with inflammation, in name at least; but as he gives us the details, the misnomer is of comparatively little importance. *Sepulchretum, de febribus*, Tomus tert. Genevæ 1700, p. 129.

As Galen correctly observes; “*Perfecta curatio a causis exorditur.*” *Methodi medendi*, lib. I.

† Bichat asphyxied several animals by the introduction of venous blood into the circulation. *Sur la vie et la mort*, p. 174.



I do not think proved. It is quite obvious however, as Treviranus remarks, that the difference between the arterial and venous blood (not to mention other causes here) will diminish in the inverse ratio of the consumption of oxygen.\* One inflammation sometimes masks another; an affection of the brain in particular, for obvious reasons, will render a co-existing morbid condition of the lungs or bowels less distinct. Sometimes an inflammation is quite latent; pneumonia for example, will exist without any of the ordinary coexisting phenomena to which we give the name of symptoms. Of these anomalies it is often very difficult to assign any adequate explanation. It has been stated more than once, that inflammation in fever is only an occasional phenomenon. This morbid condition is certainly less frequent in the viscera of the head, than in those of the thorax and abdomen. Organic lesions of the brain may, on the whole, be considered rare, in comparison with the occurrence of functional disturbance, to the causes of which last however, we possess no certain clew. It appears to me, that the occurrence of inflammation of the brain in fever, has been considerably magnified by those writers who consider fever identical with phrenitis, or who look upon this inflammation, as one at least, of the forms of fever. The presence of serum in the brain of adults is so common an occurrence after death, as hardly to constitute of itself alone, a mark of preceding inflammation in cases of fever: in fact, a certain quantity of serum exists normally in the brain and spinal cord. The turgidity of the vessels, and the presence of bloody specks on cutting the substance of the brain, are very equivocal signs. I do not mean to deny the occasional occurrence of inflammation in the brain and its membranes in fever; but I think that its frequency has been considerably exaggerated. Inflammation and excessive determination of blood to the brain, are dangerous features in fever.† The first

\* Es ist auch gewiss, dass diese Verschiedenheit des Arterien—und Venenbluts desto geringer ist, je weniger Sauerstoff in einer gewissen Zeit verbraucht wird. Treviranus, Biologie, Göttingen, 1814, Vierter Band, p. 203.

† Chacun sait que le danger, dans les fièvres s'accroît en proportion que la lésion de l'appareil cérébral s'étend, devient plus grande. Barbier, *Mat. med.* seconde éd. Tome I. p. 559.

is marked by pain, giddiness, flushing of the countenance, throbbing of the temporal arteries, injected conjunctiva, moaning, restlessness, sleeplessness, delirium or coma, strabismus—and in fatal cases, by stertor, stupor, and the unconscious discharge of urine and fæces. But most of these symptoms may occur without any inflammation of the brain; in weak anemic subjects, we should hesitate in affirming the existence of such inflammation. The occurrence of these phenomena are relative to the condition of the patient. I have seen evidences of nervous disturbance in a weak person, which, had they occurred in a strong one, I should have attributed to inflammation or violent determination to the brain. Let us look to the condition of the subject. If the patient is full of blood, well-fed, and robust—if he complains of a shooting or other severe pain in the head, with a consciousness of arterial pulsation, heat of the scalp, a quick pulse, and so forth, we can have no great hesitation in pronouncing an acute affection of the brain to exist. If some of the usual signs, as pain in the head, prove absent, or dull, it should not lull our scrutiny, since the affection may be more or less latent; but unquestionably inflammation of the brain can hardly exist without manifesting itself by certain features more or less prominent.\* Let us look to the state of the case, for the value of these signs must always have some connexion with the ordinary constitution of the individual affected—as whether

*Nulla inflammatio, sine particularis febris, tam magni in medicina momenti, quam quæ in parte omnium nobilissima ipsiusque animæ rationalis domicilio, cerebro, consistit, et tam omnem rationis usum evertit, quam præsentaneum vitæ periculum intentat, ac Græco nomine audit phrenitis. Hoffmann, Med. Rat. Tom. IV. de febre phrenetica, p. 407.*

How far the spinal marrow and its membranes are affected, both functionally and organically, in fever—and how far they participate in the morbid lesions of the brain and its membranes, does not seem to have been studied as yet, with sufficient accuracy to enable us to pronounce on these points with decision. See Ollivier, (C. P.) *De la moelle épinière et de ses maladies*, 2 ième ed. 2 vol. Paris, 1827.

\* The following is a brief, but tolerably correct portraiture of the symptoms attending those anomalous states of the brain, which commonly go by the name of inflammation. *Sub eodem vitio (φρενίτις) oculis insolita mobilitas accessit, hique eruenti, flammei, squalidique sunt, quos æger crebrò perfricat, modò siccòs, modò lachryma perfusos, lingua autem aspera, et nigra est, dentes stridore quatiantur, sæpèque cruor é naribus aliquis fertur, et interdum posteriora capitis dolent. Lommius, Observat. med. Amstelodami, 1720, p. 61.*



he is young or old, weak or robust, a drunkard or temperate. The highly interesting observations of Gooch, Pring, Hall, and others, show how necessary it is to take along with us in every instance, the constitution and condition of the patient while scrutinizing his case. In the advanced stages of fever, the sensorial disturbance is sometimes very great, but we have commonly, in such cases, every reason to believe that it is merely functional. By saying merely, I do not mean to underrate the complication, for we have abundant grounds for believing that functional disturbance alone, is quite adequate to destroy the patient. The existence of delirium alone, is no evidence of cerebral inflammation, since it probably, nay certainly, takes place, much oftener without than with it.\*

Some patients would impose upon a superficial observer. They look comparatively well, will converse plausibly, and assure you that they are getting round fast. Their eyes however, are injected, their tongue is brown—in a word they are delirious. From what condition of the nervous centres is it, that some patients are almost always sleeping, while others as continually remain awake?—but these are secrets which pathology has yet to reveal. In fine, I would say to the practitioner—make yourself acquainted with the ordinary habits and constitution of the patient—scrutinize his case closely—recollect that the value of symptoms are relative, and must receive an interpretation varying with the circumstances in which they occur.

The affections of which the lungs are susceptible in fever, form a very important complication in this disease, and one which it is of the utmost consequence to detect when formed. They are sometimes quite latent, or otherwise masked; hence it is a diagnostic maxim, now universally received, that we should never neglect to use the stethoscope in fever. A certain determination to the bronchial lining, is of common oc-

\* Pringle records that he has seen delirium produced by excessive venesection. See also Parry's *Elements of pathology and therapeutics*, p. 406. It is a matter of common observation, as Van Swieten remarks, that death is generally preceded by convulsions in animals that are slaughtered for the table. The supervention of convulsions upon flooding, is, as I have already remarked, a well-known circumstance. Consult likewise, Pring's exposition of the principles of pathology, p. p. 85, 149, 223; and Gooch, on the diseases of women and children, p. 355, et seq.

currence in fever of every form. It is indicated by slight cough, mucous expectoration, more or less uneasiness in the chest, and oppression in breathing. This affection sometimes appears to proceed to a considerable length ; but whether it be of the specific nature, and prove alone sufficient to work the changes ascribed by some writers to it in fever, is, I think, far from being ascertained. It has not been determined how long the bronchial affection precedes the pneumonia, when it does precede it, and when the latter takes place. Andral in those admirable delineations which have spread his name over the civilized world, simply informs us, that the irritation is sometimes propagated from the mucous membrane to the pulmonary parenchyma. Sometimes the pneumonia is quite patent, and presents all the varied characteristics of which this form of disease is susceptible : at others, especially in very severe and advanced cases, it is nearly latent—there is no cough, no spit, no pain in the chest, and little or no embarrassment in the respiration.\* I have been more than once shocked upon applying the stethoscope to the chest of a patient brought under my charge for the first time, to find the greater part of one lung in a state of hepatization : and I have witnessed several cases in which this complication was not even suspected, until revealed by the scalpel after death, in the form of red or grey hepatization. I have often seen persons perish in fever with extensive hepatization. It is not too much to say, that in several instances, by the fortunate detection of pneumonia, I have been able to administer those remedies which have saved the patient from otherwise, (to all appearance,) inevitable death. How very important is it therefore, to determine the existence of this serious complication. To have done so, will not always it is true, enable us to avert death, but it often will. What misery must it prove to a conscientious practitioner, to go on groping his way blindly ignorant,

\* The occasional difficulty of forming a correct diagnosis has been confessed by many practitioners. Cullen remarks, “But very often on dissection after fevers, we find the marks of inflammation, gangrene and sphacelus, when during the course of the fever, the symptoms of each are by no means evident.” Works by Thomson, vol. I. p. 563.—*La peripneumonie latente*, observes a superior writer, est un des exemples les plus frappans d’une grande altération d’un organ important qui n’est annoncée par aucun signe. Landré Beauvais, *Semeiotique*, p. 271.



or at best, uncertain of the state of his patient; perhaps exhibiting those very remedies, which in the circumstances that he was placed in, he ought least to have chosen. How often must those persons who give cordials, as a general rule in fever, fill the stomachs of pneumonic patients with wine—the more acute the inflammation, the larger the draughts.

It is a wonderful circumstance, that pneumonia will sometimes invade a person in a miserable state of prostration; under such circumstances, it is most apt to be latent. It would appear from reason and observation, that even in latent cases, the difficulty of breathing should seldom be absent; yet, although this be true, instances do occur, in which even this and every other appreciable evidence of the affection, short of that derived from auscultation, has been absent.\* It may perhaps be said as a general rule—the earlier and the later (in the last case, after convalescence has commenced) that pneumonia appears, the less latent is its invasion. It is remarkable, that in affections of the nervous system, the functional disturbance is almost always greater than the organic derangement; while in pulmonary affections, the contrary in general prevails. It is however, to be observed, that extreme difficulty of breathing, sometimes exists, with little or no pulmonary complication. Just before writing this, I saw a boy in fever, in whom the respiration was excessively laborious; the ribs and intercostal muscles were brought into violent relief at each inspiration; yet upon examining his chest with the stethoscope, the respiratory murmur was every where pure and distinct. The event proved the correctness of the diagnosis, for he quickly recovered by aid of a few simple remedies. Such cases are not uncommon; and Andral justly inquires, whether a derangement in the process of innervation, might not cause irregularity in the action of the respiratory muscles, as well as in that of those belonging to the organs of relation. Instances have occurred, in which the

\* It must be admitted, that cases do occur, in which even auscultation does not enable us to decide with certainty; but this, so far from being an argument against this mode of exploration, only affords an example of the deficiency of human means in general. Vid. Corbin, *De l'exploration de la poitrine, pneumonie latente*, p. 23.

pneumonic sputa were mistaken for bile.\* The pulse is seldom hard. In the beginning it does not present any thing unusual; but if the inflammation continues, it becomes quick and small. The respiration is of course, in the great majority of instances, highly laborious, and more or less hurried, with great oppression. In some cases, the skin becomes of a dark hue, almost livid, the blood is imperfectly ærated, and some of the phenomena of asphyxia appear to take place. The aspect of the patient at this period, with dark lips, heaving chest, and the alæ of the nostrils alternately rising and falling, is most distressing to contemplate.† The general prostration is extreme, a condition to which the presence of the altered and vitiated blood in the nervous centres, must largely contribute. The delirium for the same reason, as Smith very justly remarks, is of a low wandering character. I have however, seen patients destroyed by pneumonia in fever, without any incoherence of mind occurring. Why pneumonia should ensue at one time in fever along with extreme debility, and at another in a comparatively opposite state, are secrets for which, though within the pale of pathology, it is not yet in our power to assign any reasons.‡ Some epidemics are characterized by the frequent occurrence of pneumonia—and as I have stated, it is more common at some periods of the year than at others. The causes of this and other epidemic constitutions, we are too frequently unable, even to guess at. The pleura is much less usually affected than the mucous membrane of the bronchiæ; indeed the mucous membranes generally, are more frequently deranged than the serous, in

\* An interesting case of what appears to have been typhoid pneumonia, is related by Binningerus, *Observat. et curat. med. Centuriæ quinque*, Montbelgardi, 1673. *Observatio XLIII.* Elapsis aliquot inde diebus febre continua correpta est—successit tussis, quâ copiosissima, cocta et fætidissima expectorabantur, p. 172. He styles it—*De febre continua, abscessa pectoris, à casu.*

† The importance of attending to the features and general expression of the patient, is dwelt upon by all observers; for some valuable remarks on this head, consult Hall, *On diagnosis*, Lond. 1817, p. 8, et seq.

‡ This complication will sometimes occur in the worst forms of fever, adding greatly to their danger. Nonnullos adoriebatur cum gravedine et tussi laterumque puncturis, et mentiabatur pleuripneumoniam, imò non mentiebatur, sed verè induebat ejus habitum. *Acta erud. Berolinensium*, Tom. I. *Hist. feb. petechialium*, tunc tempore (1706) grassantium, p. 10.



fever.\* An entire enumeration of the diagnostic signs of pneumonia, cannot of course be expected in this place.

The next and very important complication of fever which I shall notice, is the abdominal. It is to be regretted that almost all the distinctive diagnostic tokens here, are very uncertain. So long as the fever persists, abdominal complications are commonly associated with it; but it is very difficult to ascertain their kind. Neither the appearances of the tongue, nor the sense of local pain, are any sure indices. It has been satisfactorily determined by Louis, Andral, and others, that the various conditions presented by the mucous membrane of the mouth and tongue, depend as much upon the idiosyncrasies of the individual, as upon any connexion with any peculiar condition of the stomach or other portions of the intestinal canal. Hence, the association of a red-pointed tongue, with the gastro-enteritis supposed by Broussais to constitute an integral part of fever, is any thing but correct. How often do we witness every variety in the aspect of the tongue, without being able to connect it with any serious affection of the digestive tube.† Nor is it easy on the other hand, to analyze the morbid signs presented by the whole frame, and refer them to the lesions which have produced them. The connexion of the appearances of the tongue with the general issue of the disease, is much more certain and satisfactory. But after all, what does it teach us—when the fever sets in, the tongue becomes red or white, then foul, hard, discoloured, chopped and dry; and when convalescence begins, the tongue grows soft, moist and clean. The changes are concurrent; and we can hardly see any alterations in the state of this organ, which precede the after phenomena of

\* See the details of a well-marked case of pleuritis in fever, in a medical officer of the Salpêtrière, which proved fatal on the eighth day, in Pinel, *Médecine clinique*, p. 145, under the title—"Typhus compliqué avec pleurisie." An instance of pleuritis terminating in effusion and death, is related in Baillie's morbid anatomy. Works by Wardrop, Lond. 1825, vol. I. p. 236.

† Piorry, *Clinique medicale*, p. 3, makes a curious observation, namely, that the material cause of the dryness and black coat which appear on the tongue and teeth, is owing to the manner in which the respiration takes place. Certainly, the mode in which the air passes, must have some share, though doubtless, not the only one. The whole passage is worth referring to.

fever so far, as to enable us to foretell their issue. From the occasional softening, to the injection, inflammation, ulceration, and perforation, which may occur in the mucous membrane of the stomach, or any other portion of the intestinal tube, with the exception of the last-mentioned, we possess no certain sign, apart from the general state and progress of the patient. The existence of that affection of the mucous follicles called dothinerteritis, is indicated by no individual sign, though many French pathologists maintain that typhus itself is the result, and consequently the presumed token of this lesion.\* The extensive ulcerations which occur in various portions of the mucous lining of the intestinal tube, are frequently unaccompanied with any uneasiness, even from pressure. Considerable pain upon pressure of the epigastrium or abdomen, is however in general, justly considered a sign of the progress of internal mischief and organic change. But that such a token is very often illusory, will appear from the circumstances just mentioned, and the additional facts noticed by Andral and others, of the occasional excessive natural sensibility of the abdominal parietes, and also of the pain arising from pressure, owing to other causes, such as those cases in which blood is effused into the interstices of the abdominal muscular tissue. It has been determined by Alison within the sphere of his own observation, that the pustular affection of the mucous follicles, and the ulceration, upon which so much stress is laid by French pathologists, are less frequent in Edinburgh at least, than in Paris. In twenty cases which he examined, he only detected ulceration once. He looks upon it as more frequent in children. The researches of Bright and several others, nevertheless, show that these lesions occur sufficiently often, both in Britain and Ireland, to keep up the wakeful

\* This affection of the mucous follicles, Billard informs us, is only attended with the usual symptoms of enteritis in very young infants, as from the age of a few days, to that of two months. Here then, we see another example of the occurrence of this follicular lesion without fever; hence the observation is of peculiar importance. From seven months to a year or so, children begin to exhibit, to use the language of the author, dothinerteritis with typhoid symptoms; or in other words, children are much more apt to contract fever at the latter period, complicated with the lesion in question. *Traité des mal. des enfans nouveau-nés, etc.* p. 401, et seq.



attention of the practitioner.\* Pain is generally an attendant on peritonitis from perforation and effusion, unless in extreme prostration—as well as in peritonitis from other causes; the latter occurrence however, as well as the former, is rare in fever.† The engorgement and swelling of the mesenteric glands, sometimes accompanied by purulent deposition, are indicated by no known sign; it is truly remarkable how these glands come to be so quickly affected in fever. A dysenteric or diarrhœal discharge is said to point out an affection of the large intestines—and constipation, one of the small; but as every observer must remark, there is nothing constant in such indications. Diarrhœa, as also vomiting, seldom occur except in the early stages of fever; they are no certain accompaniments of organic abdominal changes. A diarrhœa sometimes precedes a sudden alteration for the worse, and sometimes it is the prelude to convalescence. It is more frequent than vomiting; but from the common use of purgatives, it is not always easy to know the artificial from the natural evacuation. Certainly, when the discharge proves obstinate, and of longer continuance than usual, I would suspect an abdominal complication.‡ We know that a kind of typhoid dysentery, or dysenteric typhus, is sometimes prevalent. As a general rule, it may be here observed once for all, that in the course of fever of low excitement, frequently called typhus—or when prostration sets in during the course of fever, the pain attending

\* Edinburgh medical and surgical journal, vol. XXVII. p. 258.

† For the details of a very striking case of the ulceration and perforation of the ileum, and the escape of feculent matter into the cavity of the peritoneum, consult Abercrombie's valuable work on the diseases of the stomach and intestinal canal, 2d ed. p. 261. The remarks appended to this case, are of high interest to the professional reader.

‡ The diagnostic value of the alvine discharges, as Abercrombie and Stokes have well remarked, is very uncertain, not only as to the portions of the intestinal canal affected, but as to the nature of the affection itself. The former writer observes—"There may be every variety in the appearance of the evacuations concurrently with ulceration," etc. On the diseases of the stomach and intestinal canal, 2d ed. p. 264. After passing a number of similar remarks, Stokes goes on to say—"I have seen perfectly natural stools in cases, which immediately after have terminated fatally, and where, on examination after death, there was a vast extent of ulceration in the ileum." Lectures on the theory and practice of medicine, London medical and surgical Journal, vol. V. p. 41.

all inflammatory or other organic complications, is little or none. In this form of fever also, hæmorrhagic discharges are more common. These are in general, the result of intestinal exhalation, without visible structural change. The contents of the intestinal canal, to which, under the title of *saburræ* and other names, so much importance was formerly attached, owing to the idea that they might involve some of the poisonous matter of fever, seldom afford indications of much consequence. They consist of altered mucous, bile and fæcal matters. The latter sometimes persist in the form of *scybala*. Sometimes the intestines are distended with air, so largely secreted, that the colon has been seen to define its form through the parieties of the abdomen, and thrust the stomach aside, causing such a pressure on the diaphragm, as to occasion a very distressing dyspnœa. This meteorism is no peculiar token of inflammation. Invagination of the intestines has been noticed by Tweedie: it is rare.\* Where perforation occurs as a sequel to ulceration, it produces evidence, more or less obscure, of peritoneal inflammation. If the weather is cold, we should pay attention to the state of the patient while making our inquiries by touch and sight, as unnecessary exposure of the person may sometimes prove hurtful. In manipulating the surface of the abdomen, we should be cautious to avoid rude pressure; it is possible that the liver may be injured; the spleen is sometimes so soft, that it certainly could not sustain much, if any pressure, with impunity. Piorry's pleximeter, which is merely a little disk of ivory or metal, may be interposed with advantage when we wish to ascertain the existence of hypertrophy in the liver or spleen, or the occurrence of meteorism. When at the bed-side of the sick, whether rich or poor, while we submit the complaint to the most rigid scrutiny, we should ever conduct ourselves towards suffering humanity with the utmost gentleness and propriety.

It seldom occurs that simple affections alone prevail; they generally exist in complication; and when this is the case, it

\* In the case of Elizabeth Gossett, he remarks—"Near the termination of the jejunum, intussusception had taken place to a considerable extent, the invaginated portion of the canal being eight inches long." Tweedie on fever, p. 136.



frequently happens that some one is more prominent than the rest ; at other times it is difficult to say which is most so.\* It is obviously true as a general rule, that the more numerous the elements forming the complication, and the more intense the individual affections, whether functional or organic, the more severe must necessarily prove the disease. Accordingly—although it by no means follows that such a morbid compound should exist—we generally, or at least often find the worst cases to exhibit the most severe and numerous complications. If the difficulty of framing a diagnosis in cases of individual complications be considerable, it is assuredly not lessened, when double or triple complications co-exist. If an affection of the brain subsist, it may mask the most severe thoracic inflammation ; and in like manner, a similar affection may conceal, or help to conceal, destructive disorganization of the abdominal viscera. I do not here speak of the inflammatory condition of the brain or its membranes alone, but of that peculiar functional lesion which this all-important viscus undergoes, when exposed to the deteriorating influence of impure and undecarbonized blood. It must be quite certain that this wonderful organ and its appendages, the spinal marrow, ganglionic system, and nerves generally, will be quite incompetent to the adequate performance of the indispensable process of innervation—and consequently, that it will be unable to afford the proper supply of nervous influence, either as to quantity or quality, to the different organs—or to receive back the various modifications impressed upon it as in health, by the animal economy, whether as to pleasure or pain—or those numerous indifferent sensations, the transmission of which, are probably in some way essential to our corporeal well-being. Thus therefore, inflammation will go on without exciting pain, or that reaction, which in a less intense state of disease, would at once betray its existence. I need hardly remind the reader, that a certain supply of sufficiently healthy

\* Andral, (Clin. Med. III. 392,) speaking of a case of this kind, says—“Lorsque le malade entra à la Charité, il eût été bien difficile, je pense, de dire d’une manière positive si un organe était en particulier plus lésé que les autres. Il semblait que l’encéphale, les poumons, les viscères abdominaux, fussent tous en quelque sorte dans l’imminence de l’inflammation.”

nervous influence, to the organs, both individually and collectively, is indispensable to the preservation and continuance of life: and reflecting upon this necessity, it becomes subject matter for the most lively surprise, how nature, in many cases of bad fever, contrives to secure sufficient for the purpose. These however, are among the wonderful provisions of the Deity for the maintenance of our existence, and of which, such varied instances are day by day submitted to the contemplation of the physician.

If it is important to determine the lesions of individual organs when these only are affected, it becomes, if possible, still more desirable to ascertain their extent when complicated. For the reasons already mentioned however, this is sometimes most difficult. We must however, try to analyze the compound pathological condition of which the patient is the subject, and keep an attentive eye towards all those indications which individual organs are wont to yield in their various affections. Sometimes the cerebral disturbance when it subsides a little, or is subdued, permits the thoracic or abdominal affections to appear in all their urgency; I have seen cases in which the thoracic and cerebral complications alternated twice or thrice, as one or the other happened to become predominant. An affection of the brain may be conjoined with pneumonia, or with pneumonia and the follicular alteration or ulceration of the ileum; or the former and the latter only, may be combined. Retention and partial or total suppression of urine, may co-exist with certain states of the brain.\* Other lesions, such as pleuritis, enteritis, and peritonitis, when they exist, may be variously associated.† How far the pancreas may be affected in fever has not been made an object of much study: it is a viscus which is not very subject to disease.‡ The en-

\* Hall observes that retention of urine is often denoted by constant elevation of the knees. Hall on diagnosis, general and particular, p. 82.

† Hope points out the occasional conjunction of increased impulse or other anomaly in the heart's action, which may or may not be conjoined with pleuritis or pneumonia; this complication will be detected by attending to the diagnostic marks of these affections. He very judiciously advises the application of the hand to the precordial region in cases of fever. Vid. Treatise on the diseases of the heart and great vessels, p. 105.

‡ De Graaf devotes a chapter to the diseases of this viscus—"Quibus morbis



larged, softened, and disorganized spleen, may be combined with most, probably with all the preceding morbid contingencies. Such a condition of this organ when it exists—and, as I have said before, it is far from unfrequent, must greatly add to the general prostration.\* Is it possible for a patient to recover from fever with this viscus so affected? I should think not. As there is no diagnostic mark that I am aware of, whereby this severe organic lesion can be detected during life, the general functional derangement which its existence must superadd, will almost necessarily be ascribed to other morbid conditions, thereby adding to the general uncertainty of the diagnosis. I am not aware that there is any instance extant of this viscus bursting in continued fever, and thereby producing fatal peritonitis, as sometimes occurs in malignant intermittents. It is fortunate that organic lesions of the liver are so rare in the fever of this climate, sufficiently charged as it is with other complications; in India such affections are exceedingly frequent. How far the functional derangement of the liver may proceed in fever, and what share such derangement may occasionally or usually possess, in the morbid aggregate to which we give the name of fever, are, it is much to be regretted, unknown. The additional complication of diseased mesenteric glands must involve corresponding functional lesions; but the science of pathological analysis has not advanced far enough as yet, to determine them with any thing approaching to certainty. Affections, such as inflammation, enlargement and suppuration of the parotid, axillary, and inguinal glands, sometimes occur in fever—but those of the parotid are the most common. Much stress was formerly laid upon this last lesion, and still is by some pathologists; I cannot say however, so far as I have witnessed these occurrences, that any thing serious is indicated by them. The existence of peritonitis from the effusion consequent on ulceration and perforation, and recognized with the given exceptions, by the usual marks attendant on this inflammation, is a fatal complication. The great aggregate of morbid phenomena which

*pancreatis substantia atque illius succus infestare potest.*” *Tractatus de suc. pancreat.* Lug. Bat. 1671. See also Fernelius, *pathol. lib. VI. cap. 7.*

\* Alison's pathology, p. 180.

bears the name of fever, is itself a complication, the perfect resolution of which into all its elements, often attempted, never completed, still presents itself, and perhaps for ever will present itself, a constantly recurring problem for the exercise of human science and human subtilty.

After what has been said, we may here venture upon a few observations, as to the amount of evidence for those hypotheses, some of which affirm that fever is the inflammation of one particular organ, and others, that it is the inflammation of one or more, among several.\* This is a question, which in the present state of medical science, I am of opinion, does not require much to settle. Is it not admitted by all parties, that there are two distinct states of the animal economy, one of them certainly involving a local affection? If this be so, with what propriety can the same name be adjudged to both? Fever more or less, accompanies inflammation, and inflammation may supervene upon fever, but these conditions are not identical.† If there is a demonstrated fact within the whole range of pathology, it is, that fever may begin and end its course, whether in life or death, without the occurrence of any organic lesion entitled to the appellation of inflammation. It is also demonstrated, that inflammation, sometimes of the brain or its membranes—at others, of the thoracic viscera, and occasionally of the abdominal, may variously occur in fever. There is no constancy in this respect; sometimes it is the one, sometimes it is the other—and occasionally all are

\* The decided tone with which various writers assert the identity of fever with some of these inflammations, is very remarkable. “On nomme gastro-entérite,” says Roche and Sanson, when commencing the consideration of fever, “la phlegmasie de la membrane muqueuse de l’estomac et des intestins grêles. De toutes les inflammations qui affligent l’espèce humaine, celle-ci est la plus fréquente, et cependant c’est une de celles qui est restée le plus long-temps méconnue.” *Nouveaux elemens de pathol. medico-chirurg.* Tome premier, p. 515. See also, Boisseau *Nosographie organique*, Tome prem. p. 143, et seq., and Louis, *Recherches, anat. pathol. et therapeutiques sur la maladie connue, sous les noms de gastro-enterite, fièvre putride, adynamique, ataxique, typhoide*, etc.

† Dr. Clutterbuck has arrived at a different conclusion; this gentleman observes: “There seems to me therefore, the strongest reason for concluding, that the inflammation of the brain in fever, is not merely casual and secondary, but primary and essential; and in short, that it is the disease.” *Inquiry into the nature and seat of fever*, p. p. 189, 488. See also, Mills, Broussais, etc. *op. citat. passim*.



affected. Seeing that these things are so, how can we say that fever and inflammation, whether of one organ exclusively, or of several, are identical? For my part, I cannot help arriving at the conclusion, that to view fever as an inflammation of the brain, of the intestinal mucous membrane, or of any other given organ—though all this may occur in fever, is to arrive at a conclusion which a correct interpretation of nature does not warrant.\* Individuals perhaps, are entitled to give what names they may think proper to the phenomena of disease, provided they admit their existence, and then it is not of so much importance; but if the names given *à priori*, are the cause of leading us to form an erroneous estimate of the nature and amount of disease, as such a procedure is very apt to do, it becomes a matter of the utmost importance, to designate diseases correctly. I think however, that we are entitled to foretell, that the progress and dissemination of a rational pathology, will in a great measure tend to prevent the more extensive dissemination of the views which, with the utmost deference to those who may differ in opinion from me, I have ventured to pronounce erroneous.†

It is a universal maxim, as Galen has long ago remarked, in a science so important, that we might almost indeed, style it divine, and one which applies as much to the prognosis of

\* Alison's outlines of pathology, p. 194, et seq.

† There is a good summary of the reasons which may be urged against the local seat of fever, in "Abercrombie on the diseases of the abdomen," p. 321. See also Craigie's Pathol. and gen. anat. p. 177; likewise Cullen and Gregory's edit. of Cullen's first lines, appendix, vol. I. p. 477. There are some observations worthy of being referred to on this subject, in Cayol, Clinique medicale, p. 52. This author justly observes, that the general admission, that the lesions which occur in intermittent fever, take place after the febrile accessions, affords analogical evidence, so far as it goes, that the organic lesions which complicate continued fever also, are the consequence, not the cause of the disease. Instances are given by Cayol of fatal cases of fever without the occurrence of any lesion of the mucous membrane of the intestinal canal. Among others, I beg to refer to an interesting case, p. 130, in which all the symptoms existed during the life of the patient, that are said by those who look upon fever as the result of a follicular enteritis, to indicate its existence, in which nevertheless, the examination after death revealed no such lesion. It may however, be said with great propriety, of all those who interpret disease in so many ways—

"Nulla secta est, quæ omne vidit verum,  
Nulla, quæ non aliquid ex vero,"

fever as to that of any other malady, that the more extensive the departure from healthy structure and function, the more severe and dangerous will prove the complaint.\* So in fever, the greater the derangement of the processes of innervation, respiration, circulation, secretion, and excretion, and the more numerous and more intense the lesions of texture in the different organs, particularly the brain, lungs, and digestive apparatus, the more reason shall we have to dread the final issue. Fever is not a mere name for an unknown entity. Much doubtless remains to be ascertained respecting its real nature, and perhaps ever may remain, but we have arrived at a tolerable acquaintance with many of its phenomena, whether essential or occasional; and as Rudolphi has well remarked, should never pause, since we do not know how far our researches may eventually lead us.† This being the case, close and accurate observation of the phenomena of the disease is necessary to the formation of a correct prognosis. It is altogether impossible to acquire a knowledge of morbid function, unless by frequent visits to the bed-side of the sick; and it is difficult or impossible even for those most conversant with disease, to pronounce on the prognosis in the absence of the patient. Practical men will know very well what I mean, when I say, that there is a certain description of information which is not to be gained by books or the more lively medium of oral communication, and which to obtain, people must use their own hands and their own eyes. Will the most accurate details that language can afford, yield the same impression of a foreign country, as when we ourselves are the visitors? The medical man has need of all the information that he can procure—and he will too often find himself at fault, even after he employs all the means which lie in his power to obtain it. The formation of a sound prognosis, is closely connected with that of an accurate diagnosis: the one

\* *Cujusque morbi tanta est magnitudo, quantum a naturali statu recedit*—Galen. Con ragione si considera per una ispirazione divina quella scienza, che insegna a predire la sorte futura degli infermi, ed i cangiamenti spesso sorprendenti, che avvengono nel corso delle loro malattie. Brera, *Prolegomeni clinici*, p. 795.

† Wenn wir auch das letzte Ziel nicht erreichen können, so wissen wir doch nicht, wie weit uns ein redliches Forschen führen mag, und wir dürfen nie ruhen. Rudolphi, *Grundriss der Physiologie*, Erster Band, § 228.



is wrapped up and involved in the other.\* To obtain it, the physician should leave no means untried. He should scrutinize every organ and every function, so far as it is possible to do so, both directly and indirectly—the past and present state of the patient, and all the antecedent phenomena of the disease, up to the period of seeing the case: for he knows that the certainty which may be attached to the signs of disease, is relative to the age, habits, constitution, and condition of the organs and functions of the subjects of it.† The value of a correct prognosis is great; it secures the confidence of the patient, of his friends—and—which is of more importance, it enables us to provide for the contingencies of the complaint. The physician however, will not be rash in delivering his prediction: he is aware of the limited nature of his knowledge, and of the uncertainties of disease. There is a point in the art of prognosis, as in all other sciences—the boundary line of our knowledge and of our ignorance, beyond which we cannot go—and where the issue of events is involved in the further progress of those laws laid down by the Creator—but the nature of which is as yet unknown to us. Here, it is the duty of the practitioner to pause, and calmly, but watchfully, await the future. It has been well said, that one bad sign often indicates death more surely than many good ones, do recovery;‡ hence, an additional incentive to caution. The physician should incline to a cheerful prognosis when he can; but he has no right, by any neglect of his own, to buoy up hopes which must soon for ever fade, or inflict needless misery by the prediction of groundless evil. The general, as well as the individual prognosis attending peculiar forms of fever, has been in a great measure already anticipated. The more intense the functional derangement, and the more numerous and severe the organic complications, the more uncertain must

\* A very superior writer observes—"Un presagio rationale, dedotto dalla cognizione della malattia, determina senza dubbio con maggiore certezza l'esito futuro della medesima." Brera, *Prolegomeni clinici*, Padova, 1823, p. 799.

† Les signes ont une valeur corrélatrice. Landré Beauvais, *Semeiotique*, p. 12.

‡ "Ein böses Zeichen verkündet oft den Tod sicherer, als viele gute die Genesung," Hecker, *Die Kunst die Krankheiten der Menschen vorher zu sagen*, p. 3. Erfurt and Gotha, 1820.

prove our prognostic. It must also vary with the period at which the physician witnesses the case. Incurable inflammation of some viscus, may supervene in a neglected case of fever, which, if it had been promptly and properly attended to, would probably have terminated happily for the patient. The young on the whole, endure the greatest absolute mortality from fever; but their comparative chance of recovery is greater than that of the old and middle-aged, judicious treatment from the beginning being taken into account. When men and women advance a certain way in life, some organ or organs, in men especially, are wont to undergo chronic alterations, which are apt to aggravate the fatality of fever: the functions also, experience many changes for the worse, which cannot but have a prejudicial effect.\* The poor, generally speaking, though much more frequently attacked, recover more readily from fever than those in easy circumstances.† The latter sometimes, indulge in eating and drinking to a prejudicial excess, the effects of which are not carried off by hard corporeal exertion; hence, their organs become clogged and loaded, and are less able to support the progress of disease.

When the rich are attacked with fever, there is added to the peculiarities of the disease, the sudden cessation of the daily stimulus of succulent food and strong drink. This subtraction must be more injurious to them than to the poor, in

\* The more frequent mortality of fever in men than in women from these causes, is very striking. I have already spoken of its occurrence in the Belfast Fever Hospital, and I here beg to add the testimony of Percival on the subject. This able observer tells us, that although more females than males enter the Hardwicke Fever Hospital, at least three males die for every two females. *Transact. of the King and Queen's Col. of Phys.* vol. VII. p. 270. It will follow from the preceding, that the relative mortality increases with the age of the individuals attacked. Percival states that most persons were seized at ten years of age, and next, at thirty; but from the inaccuracy of the poor as to dates, this point could not be exactly ascertained, *id.* p. 277. Alison in his very instructive paper on the Edinburgh epidemic of 1827, insists on the great mortality of fever when it occurs in advanced life. *Ed. Med. and Surg. Journ.* vol. XXVIII. p. 249.

† *Natura robusti et plebii sine medicamentis, expectando, felicius evadunt, quam imbecilles altioris sortis.* *Interpres Clin.* p. 125.—*Hinc nobilium ferè nemo cum remediis: plebei verò sine iis plures sanantur.* Sanctorius, *De statica medicina—de peste*, Aphor. CXXXIX.



whom it is not so great, relatively speaking.\* The better classes also, are harassed with the cares attending the complicated details of business, the dread of poverty, and the torments of ambition, besides the infliction of other passions needless to specify. Their superior food, clothing, habitations, and exemption from hard labour, atmospheric vicissitudes, dirt, and contagion, render them less liable to be attacked with fever, whether occasional or epidemic: but owing to the causes already specified, they yield when attacked, every thing else alike, a worse prognosis. Persons in the meridian of life, are on the whole, less liable to attacks than the young; but for the reasons previously stated, the prognosis in their case, when affected with fever, is not the best. I think it may be established as a general rule, that after the very young, who certainly run least risk of taking fever, and incur the least when they have taken it, those of all ages afford the best prognosis whose habits are moderate, whose constitution by nature is good, and who to sufficient exertion of mind and body, join a freedom from excesses in either. An early prostration of the strength in fever is bad—so is the violent affection of any organ, whether it be of an inflammatory nature or otherwise. The inflammation which occurs before the strength is broken down, is less to be dreaded than afterwards, because, in the former case, we have a choice of active and efficient remedies, which we do not possess in the latter. Why, inflammation should at all occur in the last case, is a problem which pathology as yet, does not afford us the means of unravelling. The occurrence of thoracic inflammation is worse than abdominal—and cerebral than thoracic;† the three united, are, *à fortiori*, worst of all.

\* This in some degree explains why the poorer classes recover frequently from fever without medicine; and why the mortality amongst them is much less than among the higher ranks.—“The poor employed in long-continued and assiduous labour, acquire a habit of enduring hardship and fatigue without impairing their strength, though a few hours’ labour will fatigue a person unaccustomed to it; hence the poor man preserves some vigour for two or three weeks under the weakening and harrassing progress of fever, until the complaint is worn out; but the strength of the rich man is frequently broken down by it in the course of the second week, notwithstanding the most judicious, tender, and skilful attention.” Tuomy on the principal diseases of Dublin, p. 141.

† Κεφαλῆς πόνος σύντονος μετ’ ὀξέος πυρετοῦ, καὶ ἄλλου σημείου τῶν δυσκόλων θανάσιμον. Hippocratis Prænot.

It is a bad sign when the secretions and excretions become excessively depraved. The altered mucus of the mouth and bronchial lining afford occasional examples of this—also, foul and stinking sweat, urine, and fæces. The deposition of the lateritious or brick-dust sediment, generally indicates a favourable crisis; but as I have said before, there are exceptions to this.\* Different writers, and among the rest Huxham and Avicenna, speak of black urine, but I have never seen such; the prognosis is considered of the worst kind.† Percival however, is of opinion, that the prognosis, drawn from the state of the urine, as well as from the mere amount of the pulse, or the number of petechiæ, is very uncertain.‡ Aphthæ of the mouth, when they occur, are generally contemporaneous with fortunate results; in a few instances the reverse is observed. A more or less disagreeable smell is usually produced in fever from various causes, but sufficiently peculiar, to enable an habituated person, almost to distinguish the disease from it alone. Meteorism of the abdomen, deafness, and general depravation of the senses, are to be dreaded. Slight bloody effusions from the mucous membrane of the mouth and nose, are not much to be regarded; frequent bloody stools however, are ominous of evil. Excessive diarrhœa or vomiting, are to be viewed with distrust: I have frequently seen the former however, without any serious consequences. The more the usual mental constitution of the patient alters, the worse is it to be considered.§ Weeping and lamentation need not alarm us in a hypochondriac, but they are to be dreaded

\* Acerbi does not consider this deposition so important or so constant a prognostic sign in fevers as many others do; in serious inflammatory attacks however, particularly in those of the chest, it occurs with much more regularity, (quasi costantemente) *Annotazioni di medicina pratica*, p. 60.

Bufalini observes—"Il sedimento bianco, leggiero, unito da Ippocrate insino a noi fu costantemente riconosciuto come indizio dello scioglimento de' morbi acuti febbrili."—*Fondamenti di patologia analitica*, Ed. Terza, Pesaro, 1830, Tomo II. p. 129.

The clouds and the sediments observed in the urine, are exceedingly variable and indeterminate; and I have known the much-talked-of lateritious sediment a prelude to death. Lettsom's *Medical memoirs of the general dispensary*, p. 25.

† In *acutis morbis urina nigra mortalis*. Avicenna, *Canon medicinæ*, Venetiis, 1608, Fen XXI. cap. 8.

‡ *Transactions of the King and Queen's College of Physicians of Ireland*, vol. I. p. 297.

§ *Ἐκ κοσμίον ὁρασεῖται ἀπόκρισις κακὴν*. Hippoc. *Prædict.* lib. I.



when they occur in a man or woman of ordinary fortitude.\* Excessive prostration of strength in the robust, and violent muscular exertions in the weak, should alarm us. I do not look upon the trembling hand or tongue, as bad signs by themselves. Unconscious discharge of urine and fæces, universal paralysis, and mental unconsciousness, are of very bad omen : patients however, as I have frequently seen, will often recover from a condition, apparently the most desperate. Picking of the bed-clothes is a very bad sign : Pring mentions that he never saw a patient recover who exhibited *subsultus tendinum*.† Pregnancy and the puerperal condition, increase the danger ; so do the presence of most diseases which can co-exist with fever. The miscarriage of pregnant women is a more likely occurrence than their death.‡ Excessive timidity and unfounded apprehension, by weakening and diminishing the nervous influence, and lessening as I conceive, the power of reaction, must always be considered unfortunate complications : on the other hand, moral courage and equanimity, frequently lessen the amount of danger, and enhance the efficacy of judicious medication ; but as Prosper Alpinus remarks, these signs must be admitted with considerable reserve.§ Sometimes however, patients will die in fever without any previous warning ; and changes for the better, and recoveries also, will take place,

\* La fermezza, la tranquillità dell'animo, e la pazienza sono nelli gravi malattie altrettanti indizj di buon augurio, in quanto che impiendo l'anima dell'infermo di celestiali dolcezze, la sollevano ad una altezza affatto sgombra da nubi, epperiò la rendono inaccessibile alle pene ed alle amarezze della vita umana. All'incontro la pusillanimità el'impazienza aggravano o per lo meno sempre più prolungano le malattie, massime croniche, ed imprimono un pericolo maggiore alle malattie acute. Brera, *Prolegomeni clinici*, p. 420.

† Exposition of the principles of pathology, p. 106.

‡ Since writing the above, I have witnessed a miscarriage in fever, in the case of a robust female, four months gone : her subsequent recovery has been perfect. The complication however, is an unfavourable one ; and as Celsus says—"Mulier quoque grvida acuto morbo facile consumitur." Lib. II. cap. 6.

§ Nihilominus in multis morbis mentis constantia licet ex bonis signis sit, nullo modo salutem prædicat, quandoquidem multi ex pleuriticis, peripneumonicis, anginis, hepatis, lienisque, ac alienarum partium inflammationibus atque ex febricitantibus sine ullo mentis vacillatione moriantur. Prosperi Alpini, *De præsagienda vita et morte ægrotantium*. Lug. Bat. 1733, lib. II. cap. 2.

which we did not anticipate.\* The increasing perfection of the art of diagnosis, and close attention to the disease, will tend to lessen the number of such occurrences.

A moderate temperature in the skin is better than an acrid heat or a cadaverous coldness. A little moisture on the surface is to be preferred to a stinking sweat or total dryness. The co-existence of petechiæ is generally considered an unfortunate complication, and the fever is looked upon as of a worse character: so far however, as my own observation extends, I do not consider petechial fevers exclusively the worst, or attended with the greatest mortality. The exhalation of a cadaverous smell is a bad sign. Gangrene over the sacrum and other parts, sometimes hastens death during fever, and causes it after the convalescence has set in; when extensive, it is to be considered a very bad sign. It may exist in spots on the mucous membrane of the small intestines, as I have said before, or on the external surface: it has been observed, that the occurrence of both is sometimes synchronous. It is most inauspicious when the patient slides towards the foot of his bed, with the knees contracted, and the mouth hanging to one side; it shows that his strength is insufficient to counteract the influence of gravity which bears him downwards.† A natural position is a good sign.‡ A rapid pulse, from 120 to 130, is bad—a pulse of 140 to 150, which perhaps, generally indicates the last stage of mortal inflammation, is fatal.§ These numbers apply to adults: I think I have counted a

\* Siquidem etiam spes interdum frustratur, et moritur aliquis, de quo medicus securus primo fuit—Neque tamen ignorare oportet, in acutis morbis fallaces magis notas esse et salutis et mortis. Celsus, De med. lib. II. cap. 6.

† Ὑπτιον δὲ κεῖσθαι καὶ τὰς χεῖρας καὶ τὸν τράχηλον καὶ τὰ σκέλεα ἐκτεταμένα ἔχοντα ἥσσον ἀγαθόν. εἰ δὲ καὶ προπετῆς γένοιτο καὶ καταρρεοὶ ἀπὸ τῆς ἡλίνης ἐπὶ πόδας, δεινότερόν ἐστιν. Hippoeratis Praenot.

Eadem mors denuntiatur, ubi aeger supinus cubat, eique genua contracta sunt—ubi deorsum ad pedes subinde delabitur. Celsus, lib. II. cap. 6.

‡ There is a tolerable summary of the prognosis of fever in a useful compilation, Kleinii, *Interpres clinicus*, p. 116.

§ Haller says that the pulse does not rise above 140; and that a pulse of this quickness is seldom followed by recovery: “cum quo numero homo rarius convalescit, neque ultra eum numerum unquam inivi.” *Primae lineae physiologiae*, Par. CLXVIII. O'Brian considers the frequency of the pulse as the only certain grounds of prognosis which it affords. *Transact. of the King and Queen's Col. of Phys.* vol. I. p. 415.



pulse of 190 in a child of four years old with recovery. An intermitting pulse is sometimes good, sometimes otherwise. The pulse, as there are many examples on record, may be intermitting in health, in which case there are also examples of its becoming regular in disease. It is frequently enough intermittent in elderly persons, as Le Roy remarks, and therefore not so bad a sign as some suppose :\* it may however, accompany an affection of the brain ; and under other circumstances, as is well known, it may precede convalescence. When the drink falls with a peculiar sound into the throat, from paralysis of the muscles of deglutition, it may be considered a fatal sign ; it has always proved so in those cases wherein I witnessed it.† The same remark may often be passed respecting the hiccough. The last instance in which it came before me, was in the case of a young gentleman who died of fever with an affection of the brain. It was so loud for several hours before his decease, as to be heard throughout the house in which he lay. Rostan says that it is frequently the forerunner of death‡—in which observation he is preceded by the father of medicine. I have not seen the fatal results which authors mention, accompany the affection of the parotid glands ; it is not common in these countries, though occasionally a bad feature in foreign epidemics.§ The prognosis in the various inflammations and other local affections, will of course be contingent on the diagnosis, which need not here be repeated. Puerile respiration in the adult is bad, as it indicates that a portion of the lungs is impervious to air. The absence when it should appear, or the suppression of the pneumonic spit, are of unhappy augury : the spit itself indicates a dangerous complication.

\* Re Roy, Du pronostic dans les maladies aiguës.

† Boisseau, Nosographie organique, Tome prem. p. 163.

‡ Cours de médecine clinique, troisième partie, prognostic.

ἐν τοῖσι καυσοισιν ἐὰν ἐπιγενῆται ἥκτερος καὶ λύξι πεμπταίῳ εἶναι, θανατῶδες. Hippoc. De judicationibus—Singultus loquendo invalescit, et ut cum febre periculum augetur, sic eadem decrescente, res in vado est. Tulpus, Obs. med. Lug. Bat. 1716, Monita medica XIX. Postremò nemo nescit singultum, lipothymias, convulsiones, delirium obscurum et triste, inconditas manuum motiones, affectus comatosos, etc. symptomata esse letho finitima. Lieutaud, Prax. med. de feb. malig.

§ A fatal case, in which death was preceded by excessive swelling of both parotids, is given in Pinel, Médecine clinique, p. 76.

The cessation of the expectoration, decomposition of the features, insensible pulse, and the diminution of pain, always precede death, from hepatization of the lung.\* Convulsions, coma, dilatation of the pupil, double vision, and the Hippocratic face, are tokens of evil.† Hemiplegia in fever is mortal. I have seen a person with one pupil much larger than the other, without any co-existing affection of the head. Half-shut eyes are rather a bad sign, as Pinel, Tuomy, and many others have observed.‡ Long-continued want of sleep, raging delirium and muttering stupor, are of the worst omen. The loss of perception and intelligence, decomposition of the features, impossibility of voluntary exertion, a fluctuating and struggling pulse, dropping of the chin, the saliva falling from the mouth, a gasping, stertorous respiration, a cold surface, and livid, cadaverous extremities, indicate the rapid approach of death.§ A happy convalescence is pointed out in some cases by a speedy, in others by a tardy return to healthy function. The pulse becomes slower, the burning skin grows

\* Landré Beauvais, *Semeiotique*, p. 5.

† Προσώπου διαφθορὴ θανάσιμον—γένοιτο δ' ἂν τοιοῦτον, οφθαλμοὶ κοῖλοι, εἰς ὀξεία, κρόταφοι συμπεπτωκότες, ὥτα ψυχρὰ καὶ συνεσταλμένα, δέρμα σκληρὸν, χρῶμα ὡχρὸν ἢ μέλαν. πελλαινόμενον δὲ ἐπὶ τούτοις βλέφαρον, ἢ χεῖλος, ἢ εἰς, συντόμως θανάσιμον. Hip. Coac. Praenot.

‡ Acerbi, *Annotazioni di medicina pratica*, storia sesta. The case is headed—“Febbre tifoidea che terminò colla morte per metastasi, accaduta nelle parotidi.”

Likewise, J. P. Frank, *Epitome, de curand. hom. morb.* p. 98—also, Burserius, *Institut. med. pract.* Tom. II. § 276—302—and Van Swieten, *Commentaria in Boerhaave*, § 741.

This is a very common feature even in bad fever. I do not like it, although I have seen patients recover with it. In the consecutive fever of cholera asphyxia, it is peculiarly frequent and striking, the tunica conjunctiva being at the same time yellow, semi-injected, and seemingly covered with a kind of mucus. I have seen this appalling sign very often in this last-mentioned form of fever, which, as all who are conversant with it are well aware, is peculiarly intractable and destructive. Some people however, as I have more than once witnessed, sleep with their eyes half open in health, a fact which has been noticed by Brera, *Prolegomeni clinici*, p. 339.

§ εἰ δὲ πρὸς τῷ βάρει καὶ οἱ ὄνυχες καὶ οἱ δάκτυλοι πελιδνοὶ γίνονται, προσδόκιμος ὁ θάνατος παραυτίκει. Hip. Praenot.

Ad ultima vero jam ventum esse testantur nares acutæ, collapsa tempora, oculi concavi, frigidae languidaeque aures et imis partibus leniter versae, cutis circa frontem dura et intenta, color aut niger aut perpallidus. Celsus, *De med. lib. II.* cap. 6.



cool, and is refreshed by a gentle perspiration; the eyes grow bright, and the features assume a natural expression; the pains disappear; sleep and cheerfulness return, along with a desire for food; the mind recovers its activity by degrees; and in general, the convalescent experiences a consciousness of the highest and most delicious well-being. Before I close on this head, I may allude to the kind providence of the Deity, Who, when functional and organic derangement reaches a height which would be difficult to bear were we sensible of our sufferings, closes the external avenues of our consciousness, and thereby spares us the infliction of many a pang. Thus the approach of death is hidden from the patient, and this change so generally dreaded, is consummated almost without the knowledge of the sufferer.\*

The treatment of fever, and of all complaints indeed, may be said to rest on three primary conditions—namely, the pathological and diagnostic indications—and therapeutic experience. Fever-cases themselves, may be divided into three classes—those which are controllable by medicine and recover, those which are not and terminate fatally—and finally, those which terminate favourably without the aid, or at least the necessity of medicine.† The proportion of the cases constituting each division, will be determined by every practitioner for himself. An accurate knowledge of the powers of medicine, is an acquirement of the highest importance to every

\* Soccombano alcuni a poco a poco senza dolore e senza inquietudine—Brera, *Prolegomeni clinici*, p. 68.

† Cullen goes farther—"It is a fundamental principle that nature cures the disease." Works by Thompson, vol. I. p. 561. Such a proposition as this requires restrictions to reduce it to correctness. If we yield to art all that its most enthusiastic supporters have asked, it must still be admitted that the aid of nature in addition is not to be dispensed with; it is quite certain however, that many cases of fever occur, which nature alone, is inadequate to bring to a fortunate termination, Brera observes—"Giornalmente ci fa conoscere l'esperienza, che popolazioni intiere, et la massima parte delle persone indigenti si liberano il più delle volte da malattie gravissime senza verun sussidio medico, e per opera delle sole forze della natura. L'osservazione clinica ci dimostra ancora, che rimangono non di rado superate le stesse malattie in più individui trattati con metodi di cura diametralmente opposti. Le quali considerazioni quasi ci porterebbero a sospettare, che l'esito delle malattie sia da ripetersi più dalle operazioni della natura che dai sussidj dell' Arte." *Prolegomeni clinici*, p. 808. Again—"Νούσων φύσεις ἡγεροί;" Hip. de morb. vulgar. lib. VI. § 5.

medical man. By means of it, he is prevented from indulging in fruitless expectations, or inspiring them in others. The belief in the powers of medicine is greater in general than the reality; a properly directed confidence nevertheless, is beneficial. By some however, medicine is underrated; and I hardly know a more pitiable condition than that of the man, who is constantly employing means which he believes to be useless. Whatever efficacy they may have in the hands of others, they must almost necessarily lose in his.

When our organization, by the law of its being, wears out—is prematurely exhausted, or receives irrecoverable shocks, it must necessarily perish; but circumstances very often occur, in which life hangs upon human agency, and the cases are very few, in which art cannot add something beneficial to the efforts of nature: in the prevention of disease indeed, human skill is inexhausted and inexhaustible.\* In the exhibition of medicines, there is a leading circumstance which ought never to be overlooked—namely, that the power of the medicine is contingent upon the condition of the organs and functions of the person to whom it is exhibited. It may be compatible in a given disease, under given circumstances, in a given individual—yet let the circumstances alter a little, the disease even, remaining the same, it ceases to be so. What is the use of exhibiting a medicine when the constitution can display no receptivity to its action?

Whosoever treats fever from the symptoms as recorded in nosological abstracts merely, must commit serious errors. The word itself is an abstract term, a name for a vast variety of pathological conditions, which to be treated properly, must

\* The enlightened physician will readily agree with the very just reflection of Meissner, which indeed, embodies my own sentiment—"Dass es Krankheiten gibt, welche die Natur nicht mehr, wohl aber der Arzt noch heilen kann; und dass ein weiser Arzt wieder andere Krankheiten, die die Natur nur durch heftige und gefährliche antagonistische Stürme heben könnte, auf gelinderen Wegen zum Heile zu führen fähig ist." *System der Heilkunde*, p. 109.

This is very different from the opinion of those physicians of whom, I regret to say, I have known a few, who affirm that art can do nothing in fever. "Brown," says Young, "was of opinion that the course of fever is the same when left to the course of nature, as when treated by the best established remedies." *Introduction to medical literature*, 2d ed. Lond. 1823, p. 20.



be first determined on the human subject. These conditions are the individual concretes which make up the sum of fever in general. Who can possibly treat fever with propriety who is not more or less conversant with the science of pathological analysis. To look at the external man merely, in fever, is to commit a grand error—if we do not learn to detect the pathological condition of the unseen organs, from the state of those which we do see, we shall never know how to treat fever, unless we are content with the merest empiricism.\* The variety of the pathological conditions above alluded to, has caused the numerous divisions of continued fever: if the former were constant, or if the latter included all the varieties, such divisions would be very proper; but as this is not the case, their pernicious inutility becomes evident. I say pernicious, because the man who only thinks of these divisions in fever, instead of entering minutely into the pathology of the case—of ascertaining what the constitution of the subject is—the previous condition of his organs and functions, and his ordinary habits—whether the fever is one of high, moderate, or low excitement—whether there be local congestion or inflammation—and where; in place of determining these all-important particulars I say, he sets about to inquire, whether it be a synochus or a synocha—a gastric, a nervous, or a typhus fever, and so forth—for I need not enumerate the hundred and one names which have been given to fever. It is all very well when the patient's friends inquire of a medical man, "what kind of fever it is," to tell them some name to satisfy them, for they will rarely be satisfied by being told it is a fever—they too, must know what kind of fever it is—and as they are seldom acquainted with pathology, it will be very proper to gratify them. But for a medical man to be satisfied with a mere name, is to me most incomprehensible. What, a disease of such varied constitution to give it a name, and then leave the further consideration of its pathology aside! How absurd—how revolting to reason and humanity! I appeal to every man of experience, whether fever of every pitch, and every gradation, from raging excitement to the lowest prostration, may not be almost daily

\* La parte secreta ed invisibile delle patologiche condizioni. Tommasini, Sullo stato attuale della nuova patologia Italiano, p. 52.

observed, not to speak of the vast variety of functional and structural lesions which this disease in different cases comprehends. Well then, the physician when called in, will determine with as much celerity as is consistent with accuracy, the ingredients, if I may use the term, of the particular case which comes before him.\* In epidemic fever, he will meet with very numerous cases, though far from all, which present a close analogy with each other. He will find the fever of one year, to vary greatly from that of another; but during ordinary periods, he will witness almost every variety, according to the circumstances in which it occurs, and which have been so often enumerated. He will see that fever, every thing else alike, is not to be treated in the same manner in a child as in an adult—in a robust man or woman, as in the old and worn out—in a person attenuated by want, over-exertion of mind and body, or pressed down by care and anxiety, as in one who is fat, robust, well fed and free from care—in the healthy and vigorous, as in the cachectic and delicate: in a word, without farther particularizing varieties which are almost endlessly complicated, he will be regulated by the circumstances of the case, which he will minutely trace, and act accordingly. This sad influence of nominalism, is not confined to fever, it has extended to every disease; and all have been ticketted and labelled by the nosologists, in divisions and subdivisions of seeming propriety. We should never rest satisfied with names, when it is in our power to acquire a minute and practical knowledge of the phenomena which they represent. This will enable us to do good with our remedies, and avoid harm; to attain which result, is, as the learned Hufeland has well remarked, one of the most important maxims of the therapeutic art.† The essence of disease any more than that of life, will never lie open to human gaze; but much remains for inspection, every thing indeed, that is essential to our well-

\* Ad eam rite instituendam oportet intueri ætatem ægri, et corporis habitum, consuetudinem vivendi, et anni tempestatem, et morbos tum temporis frequentes. Heberden, *Commentarii de morbor. hist. et curat.* ed. alt. Lond. 1807, cap. XXXVII. de febre.

† Das Heilmittel sey nicht angreifender und lebenszerstörender als die Krankheit. Hufeland, *Von dem Rechte des Arztes über Leben und Tod*, Berlin, 1823, p. 74.



being, and let us learn what we can.\* The science of therapeutics, perhaps from the intrinsic difficulty of the subject, has remained more within the trammels of empiricism than any other branch of the healing art. Much remains to be done, before it can attain a rank equal to modern pathology, with which science it has an intimate connexion. A rational inquiry into the powers of artificial agents, and a minute exposition of their influence on the functions and organs, constituting the aggregate, which we call the animal economy, in all the various conditions which that economy is capable of presenting, in health and disease, remain to be written.

The treatment of fever, as I have so often said, alters with circumstances:† we have not to deal with names, but with varying morbid conditions of the animal economy.‡ In ordinary simple fever, without high excitement, or any serious functional or organic complication, the treatment is sufficiently simple; when combined with functional or organic disorder, our efforts must vary accordingly. These are the complications which so frequently require our highest skill and energies. Hence, it should be always our object to see the case as early as possible; for although we may seldom be able to check the disease, we then have it most in our power to prevent those formidable accompaniments which render it so frequently fatal. We are never to trust to the seeming mildness of the attack: the complaint which sometimes commences with apparent moderation, may afterwards expand into one of uncontrollable violence.§ Independent of general excitement and

\* Gesundheit und Krankheit, zwei Zustände, in welchen sich alle Wünsche und Klagen des Sterblichen vereinigen, und dem Anschein nach so entgegengesetzte Bestimmungen des organischen Lebens, sind daher eben so wenig erklärbar, als das Leben und organismus selbst. Grohmann, Philosophie der Medizin, p. 111. Berlin, 1808.

Der Tod oder das Ende des Lebens ist daher so wenig, wie das Entstehen und der Lauf des Lebens, begreiflich. Id. p. 84.

† ὁ δὲ καὶρός ὁξύς—Occasio praeceps! Hip. aphor.

Hic enim breve spatium est, intra quod, si auxilium non profuit, aeger extinguitur. Celsus, de med. lib. III. cap. I.

‡ An able writer thus observes: “In fine, continued fever is nearly an epitome of all diseases, with symptoms as numerous, and forms as various as its victims.” See O’Brien on fever, Transact. of the Col. of Phys. in Ireland, vol. III. p. 505.

§ Nulli morbo magis convenit utile illud praeceptum, *principiis obsta*, quam febribus. Inter initia enim juvare plerumque facile est; at cum malum jam inva-

mere functional disorder, we must pay the utmost attention to prevent the onset, or if we cannot do this, the progress of organic disease, which, especially in the brain, sometimes begins and pursues its course in the most insidious manner, to a fatal termination. When once, change of structure in an organ takes place in fever, our remedial powers become very limited; it is only in prevention that we are strong. Our efforts however, must be in due subordination to those of nature, who after all, is the most potent healer of disease.\* Sometimes we can set a pause to fever, but too generally its course cannot be arrested.† This is one of the most remarkable features in this disease; we can moderate excitement, prevent or repress inflammatory complication, but we cannot in the great majority of instances, arrest the progress of fever. Why or wherefore this is so, is among the arcana of nature which we cannot lay open. When the excitement is moderate, and no unusual complication, whether functional or structural, presumable, it is sufficient to keep the patient cool, by lessening the warmth and the amount of his bed-clothes—taking away his feather-bed and under blanket, and by placing him on a matrass, making an allowance however, for age and constitution, and the season of the year. The rich are gene-

luit, difficilior aegrotanti succurritur. Praeceptum enim occasio est.—Mead, *Monita et praecepta medica*, London, 1751. de feb. contin. § 3.

\* Quapropter sapientissima natura, sive conditio et ordo motuum, quo natura morbos praecavet, praemonstrat quoque medico viam, quid in negotio praeservationis a morbis agere, intendere vel moliri debeat. Hoffmann. *Opuscula med. pract. dissertat.* II. De recta et simplicissima natura medendi methodo, p. 43.

Nam felix medicatio cui adiutrix natura succurrit, irrita vero quae repugnante natura tentatur. Medicinæ leges naturæ legibus consentaneas esse debere. Fernelius, *De med. in præfat. lib. I. de therapeut.*

† Naumann justly says in his very learned and elaborate “*Handbuch der medicinischen Klinik*,” Band III. § 247, “Sobald der Typhus einmal sich vollständig ausgebildet hat, so ist keine menschliche Kunst vermögend, den Verlauf desselben abzukürzen.”

Martyn, (Geo.) a physiologist like Pitcairn, addicted to the application of mathematics to medical science, has justly as well as beautifully observed; “Quæ benigna natura in multis morbis opus suum suo tempore exequitur, materiamque morborum debito ordine ac via tum secernit, tum etiam expellit, ut nostra ope, nostris artificiis atque auxiliis non indigeat, suis viribus optime instructa, suis opibus locuples, suo denique ingenio satis edocta.” Martinii, *De similibus animalibus, et animalium calore*, Lond. 1740, cap. II. coroll. 4.



rally supplied with roomy apartments, when, as rarely happens, they contract fever; but as the poor patient, when not provided with hospital accommodation, is generally sadly off in this respect, he should at least have his bed-room, made as clean and airy as possible. The persons of poor patients, children especially, should be washed with soap and tepid water, when it is practicable, there being no existing counter-indication—their hair clipped or shaved, according to circumstances—and provided with clean linen: with the rich, such precautions are, or should be attended to, as a matter of course.\* A purgative should then be exhibited with the least possible delay; the kind is not very material, provided it procure the necessary evacuation. A bolus or powder, containing calomel and jalap or rhubarb, proportioned to the age of the individual, is very proper. It may be followed by an infusion of senna combined with one of the purging neutral salts, or in its place, a little castor-oil, to be repeated at intervals, according to the urgency of the occasion. If we can see the patient early enough, it may be proper to try if we can stop the further progress of the disease, by the exhibition of a vomit, composed of ipecacuanha and antimony.† Sydenham very justly observes, that when blood-letting and an emetic are both indicated, we should bleed first; for he says, that by the neglect of this precaution, he has more than once seen the rupture of a vessel in the brain, and apoplexy produced.‡ Whether the

\* Vid. Elliotson's lectures on fever, Lancet vol. XVII.

† See Cullen's works by Thomson, vol. I. p. 654. There is hardly a doubt, says this writer, that on the approach of fever, an emetic may be useful.

‡ Sydenhami opera, § 1, cap. VI.

Relative to this point, Wintringham has observed, (*Commentarium nosologicum*, Lond. 1733, p. 123;) “Et revera meritò quæri potest, an constans emeticorum in accessu febris exhibitio, ut vult Sydenhamus, et ponit hodierna praxis, nisi a materie prava in ventriculo hospitante indicatur, *mala non levia post se frequenter trahat*; cum ex quàm plurimis causis, ab hac longe diversis, derivari posse hunc vomendi conatum, docent partium consensus et nervorum propaggines. Certè, ni me multum fallit observatio, emetica in febribus caput petendibus *non tantum inutilia, quin etiam perniciosa symptomata* in morbi decursu producentia, a cerebri vasis nimis inde repletis et concussis, non raro notavi.” The strictures of this celebrated writer against the use of emetics, are worthy of our most serious attention—but I think it will be apparent, strictly speaking, that they only refer to their improper and ill-timed exhibition.

Friend thought highly of the utility of emetics in fever. He says expressly in the

use of this means will succeed sufficiently often to justify its general employment, I leave to others to decide; I am satisfied however, that it occasionally proves successful. The purgatives above mentioned, or others, may be continued at intervals, during the period of excitement. Sometimes the existence of a slight diarrhœa supersedes the necessity of their employment; in many cases purgatives have been administered before medical advice is sought for. Occasionally, mild enemas may be exhibited, conjoined with purgatives by the mouth. With children, a little senna tea, sweetened with sugar, and milk—or calomel and sugar—or cream of tartar and magnesia, will frequently prove useful succedanea to open the bowels, or keep them so. These little creatures take medicine with difficulty and repugnance, and they should be spared the infliction of nauseous drugs when it can be avoided. As to drink, some patients prefer cold water, others toast and water, buttermilk, whey, rice-water, apple-water, bread tea, weak lemonade, mineral lemonade—that is to say, water acidulated with a mineral acid;\* the expressed juices, strained and much diluted of foreign or domestic fruits, answer

beginning of his Fourth commentary, that he is unacquainted with any remedy, equally salutary, in the beginning of these diseases.

*In initio permagni interest vomendo ventriculum purgare—Primis hujus morbi diebus, remedia ex antimonio (et pulv. ipecac.) mitiora, quæ vomere faciunt, et ventrem solvant, summo certe sunt auxilio.* Heberden, *Comment. de morbor. hist. et curat.* cap. XXXVII. de febre.

\* There is an able analysis of the utility of acid drinks during fever, in Barbier, *Mat. méd.* seconde ed. Tome II. p. 637. The *diæta aquea* in fevers, appears at one time, to have been very general in Italy and Spain; so much so indeed in the latter, as to have given subject for Le Sage's ridicule. This frequently beneficial practice, finds an able advocate in Senac. Vid. likewise, Van Sweiten, *Commentaria in Boerhaave*, § 605, and Lommius, *De curand. feb. contin.* § 3, cap. II. There is a very good summary of the remedial uses of water as a remedy in fever, in Thompson's *Materia medica*, vol. II. p. 667.

A remarkable instance of the efficacy of cold drink and cool air, originally given by Benevati, is related in the *Philosophical Transactions*, vol. LXIII. p. 189. The patient who was nearly given over in fever, had contrived to leave his room furtively, and was not found until the third day, two miles from home, but quite well, and wondering as much as those who sought after him how he had got so far away. The snow was lying on the ground at the time, and he had swallowed a large quantity of it in the interim.



very well, preserved tamarinds for instance, make an excellent drink.\* The thirst is usually much greater in fever of high excitement, than in the fever of low excitement, commonly styled typhus, in which I have met with frequent cases where the thirst was not greater than natural. A sufficient variety should be provided for the patient without fatiguing him with questions on the subject, as he generally tires of one thing. As to his position, it should be natural, the bed sloping, and the head neither too high nor too low—the pillow should not be too soft. Air ought to be freely admitted, yet not so as to allow a current to play continuously on delicate persons, who might contract an affection of the lungs in consequence. All houses—certainly all hospitals, should have ventilators in the ceiling, which are better and less injurious than the partial drafts of air occasioned by doors and windows. Bed-rooms should have no fires unless in cold weather, and even then, guardedly; in summer, some people stuff their chimneys, which, in such cases, should be freed. All noises, and every excitement of the mind and feelings, should be carefully avoided. The conduct of the medical man should be gentle and cheerful; a poor sick creature is easily alarmed. Additional caution is necessary when there is more than one medical attendant. All possible discussion and remarks should be avoided in the sick room: medical and other directions should be given elsewhere. Whispering and grave looks are apt to disquiet a patient. The gossip of nurses and others, should be forbidden, and no one should frequent the sick room whose presence is not necessary to the patient. In fact, nothing, however seemingly trifling, which is capable of promoting the well-being of the patient, ought to be neglected. It is needless to say, that he should receive no food; nature has created a disgust towards it for the wisest of purposes, and her good intentions should not be frustrated. A little very thin gruel occasionally, after the excitement of the disease subsides, is sufficient. Among the remedial measures is one,

\* Aretæus commends the exhibition of cold drinks in fever—“καὶ ἰητρὸς δὲ ἀγαθὸς ψυχρὸν ἀνὶ δῶν πολλὸν ἀσινέως, ὅπως ἐν τῇσι ἄλλησι καύσει.” De causis et signis acutorum morborum, lib. II. cap. 8.

which, if not the most important, is certainly one of the most agreeable to the patient, that is, the use of cold or tepid lotions: the latter more especially in winter.\* They may be acidulated or not, with a little vinegar, and there can be no objection to a little Cologne water, or other perfume when wished for, since there is no occasion to make the sick room more disgusting than is avoidable. These lotions may be copiously applied with a large sponge, over the face, neck, chest, arms, feet and legs, and repeated at intervals, so as to help to keep the surface cool. I have found a lemon cut in two, and applied to the burning temples, very refreshing in my own case, and in those of others; it is both fragrant and agreeable. A glare of light should not be admitted into the patient's room, but it need not be kept gloomily dark.

The commencement of convalescence is indicated by the breaking out of a gentle moisture over the surface, and the cessation of the evidence as well as the consciousness of indisposition. It is impracticable in the great majority of cases, perhaps in all, to hasten this cutaneous discharge by antimo-

\* There are some good observations on the *modus operandi* of cold affusion in diseases attended with extraordinary development of heat, in Edwards on the influence of physical agents on life, p. 258.

The exhibition of cold affusion during fever in adults, is not at present a general practice among the profession. Without holding any very sanguine notions as to its efficacy, I believe that as a palliative measure in fever of high excitement, with a hot burning skin, and when there is no complicating inflammation, it will cool, and render the patient more comfortable than he would otherwise be. It would hardly be generally practicable in hospitals, except with young subjects. In the fever of warm climates, I should consider it frequently indicated. Most people have read in Chardin's travels, of the beneficial and grateful effects of cold affusion in his own case, when treated for fever in Persia. The manner of employing it, by those who have enlarged most on its efficacy, will be found in the fourth chapter of the first volume of Currie's Medical reports, and in Jackson's work on the practice of affusing cold water in fever, p. 160.

Kolbani (*Bemerkungen über den ansteckenden Typhus*) mentions the practice with more than ordinary approbation. He says—"Allemaal waren die guten Wirkungen dieser Behandlung augenscheinlich, und in keinem Falle die Krankheit tödtlich, nachdem dieses Mittel gebraucht wurde."

Percival approves of ablution and cold affusion; he caused buckets of cold water to be thrown on children. *Transact. of the Col. of Phys. in Ireland*, vol. I. p. 331. O'Brian however, prefers cold lotions, as he says that cold affusions frighten the patient. *Id. Report of the Cork-street Fever Hosp.* p. 404. Marsh again, is in favour of them, *Dub. Hosp. Rep.* vol. IV. p. 514. In fact these and all other means must be employed with discrimination.



nials or other diaphoretics; hence the great mass of enlightened practitioners, and I fully concur in the general voice, renounce their employment for such purposes. The tongue also, becomes gradually moist and clean—and the senses and mental faculties, with all the bodily functions, regain their activity by degrees. The patient however, should not be allowed to sit up to have his bed made, talk, or otherwise exert himself without much precaution, lest a relapse be induced. Extreme caution also, is necessary in resuming ordinary occupations, and the usual food and drink. Farinaceous food, stale bread and weak tea, and finally, soup and bread, should be carefully administered. With weak persons, a little wine is sometimes necessary. The return to animal diet must be very gradual; I have frequently seen relapses produced by the too early or imprudent use of fleshmeat, and even vegetable food. When we consider the vast surface of the intestinal tube, and the numerous functions previously so long disused, brought into action during the process of digestion, along with the weakened state of the patient, we shall see much ground for caution. I think it best to allow only an ounce or two of the animal fibre of well-boiled or roasted beef or fowl at first—free from fat, minced very small—mixed with a potato, or eaten with bread not too fresh. If the patient be weak, he may sometimes be allowed a little wine and water with advantage at his meals; the previous habits of individuals, render this more necessary in some cases than in others. A child should of course, receive proportionably less of every thing than an adult. When the patient agrees with these trials, his allowance may be gradually increased, both in extent and variety. Convalescence is very much promoted among poor patients, by a judicious and liberal supply of animal food and light ale at the proper period. During the convalescence, a gentle saline or other purgative, will prove occasionally necessary. Great attention should be paid to hinder the patient's supplies from preceding his wants or his appetite; and above all, his friends should be prevented from over-stuffing him. Sweetmeats and pastry are often given to children at this period, than which nothing can be more imprudent. Ripe sub-acid fruits—such as grapes, oranges, and gooseberries, may be allowed in modera-

tion. Exposure to the open air, especially in winter, should not take place too early, nor without sufficient precaution to avoid taking cold. A judicious and amusing companion helps to quicken convalescence. A pleasant bitter infusion, with or without a saline ingredient, is frequently useful at this period, when the stomach requires a tonic; and certainly the physician should continue to visit his patient, until past the risk of a relapse. Such is the treatment which I look upon as most appropriate in light and simple cases of fever.\*

In fever with excitement, the grand object is to prevent, or at least remedy, local determination and inflammation.† This is the fundamental point upon which the early, and often the advanced treatment of complicated fever must turn. The regulation of functional derangement is more or less in our power; but it is the common admission of the great majority of pathologists, that to the inflammatory complications of fever, the danger and great fatality of that disease are mainly owing. Our attention should therefore never sleep—nor should the most seemingly mild attack lull our ever watchful scrutiny. The exercise of the faculty of attention when properly cultivated, becomes habitual and pleasurable; and though we may frequently find no cause for apprehension, yet when due attention is paid, we shall often experience the satisfaction of saving a life that would otherwise have been lost.‡ I can hardly find terms sufficiently strong to urge the absolute, the indispensable necessity of close attention to the circumstances of every case.§ We are always to be on the look-out for dan-

\* *Sub stadio reconvalescentiæ sæpe nihil aliud requiritur, quam aer purus siccus, mundities, diæta blande nutriens, vinum bonum dosi moderata, animi exhilaratio.* Bene, *Elementa med.* Tom. I. p. 127.

† This principle is now fully acted upon by the modern Italian pathologists, vid. Tommasini, *Sullo stato attuale della nuova patologia Italiana*, Milano, 1827, p. p. 11, 12, 16, 17, 32. And this not in one, but every description of fever.

‡ We cannot, as Thompson justly observes, acquire a knowledge of medicine from general terms, but by patient study and observation. *Lectures on inflammation*, p. 89.

§ Armstrong after very ably and fully insisting on this point, adds, what every right-minded individual must concur in—"If any man think that the science of physic is a trifling and laughable thing, a mockery only, concealed by the semblance of seriousness, he should entirely leave the profession, as his practice must be as fatal as his opinion is false." Armstrong's lectures by Rix. p. 577.



gerous complications in every form of fever, from the mildest that can occur to the most severe. It is a very great mistake to suppose that epidemic fever alone presents the fever of low general excitement, with great nervous prostration, commonly called typhus. We find during the great Irish epidemics, that the variety was very great, both as to the functional derangement, and the organs affected with inflammation; in fact, that the disease presented almost all the range of which it is capable; that there was fever of high excitement and of low excitement, with every modification as to duration, nervous affection and local lesion.\* Inflammation in truth, may take place, whilst the nervous derangement varies exceedingly, and while the general excitement of the circulation is high or low.

Sometimes fever commences with considerable congestion, cold surface and cold extremities, shivering, head-ache, and a miserable pulse; but there is no occasion to establish such fevers as a class; in point of fact, as I have said before, they do not often occur. When such patients are sufficiently strong to bear bleeding, it will help to resolve the congestion; in which case, the pulse will rise in fulness and frequency, violent excitement may ensue, and perhaps local determination or inflammation, that may require the use of the lancet. In other cases, it will be expedient to restore the capillary circulation of the surface, by moderate stimuli, the hot-air or warm-water bath, friction, bottles of hot water, or bags of warm salt, along with other well-known succedanea, for the restoration of heat and the purpose just mentioned. The propriety of blood-letting in this case, where these means are successful, will depend upon the after excitement and local determination; in old and feeble persons, it will prove much less frequently necessary. Congestion may take place to a variable extent, and at different periods of the disease, and will demand a

The best mode, says Abernethy, of obtaining and extending medical and surgical knowledge, is, in my opinion, to pay that strict attention to diseases which qualifies us to note even the slightest shades of difference that distinguish them from each other. See the preface to his *Surgical and Physiological works*, Lond. Longman and Co.

\* Barker and Cheyne on the fever epid. in Ireland, vol. I. p. 431.

partial employment of the means already mentioned. Sometimes the feet or hands merely, are cold or livid, and may require a tin feet-warmer filled with heated water, and a bottle or two of hot water. When I use the word congestion, I mean venous congestion; when I mean arterial congestion or determination, I speak of it as such.

I shall now proceed to the treatment of fever with general excitement. Here, when the patient comes first under our observation, at a sufficiently early period of the disease, say before the fifth or seventh day, with a hot burning skin, a rapid bounding pulse, suffused eyes—head, back, and limbs aching—anorexia, restlessness, and thirst, but without any apparent local determination, it is proper to bleed.\* The quantity to be taken away, will depend upon the urgency of the case, and the age, habits, and strength of the patient.†

\* Would Morton, as Rush observes, have had the very fatal fever to describe, which he mentions, if he had had recourse to a remedy so frequently valuable as blood-letting.

† There are a number of very valuable observations on the practical management of fever with high excitement, or “fièvre angioténique,”—as he calls it, in Pinel, *Médecine clinique*, p. 18, et seq.

Brown has sensibly enough remarked, the more we purge, the less we need bleed, and vice versa; but this must be taken with a limitation. “Ad summam, eo minus cujuslibet auxilii, quo largius alia in usum vocentur, opus fore videbis, nimiaeque detractionis periculum vitari, et saluti prudentius consuli cognosces.” Brunonis, *Elementa medicinae*, par. CCCCLXX.

For some excellent observations on the necessary amount of blood-letting, and the caution with which we should avoid pushing this evacuation to excess, see Frank, J. P. *De curand. hom. morb.* lib. I. de feb. p. p. 136, 190; likewise, Burserius, *Institut. med. pract.* Tom. II. § 244—“Ubi igitur pulsus plenus, et magnus, aut durus, rubor faciei, et dolor capitis, aut gravitas, aut sopor, aut defectus consuetarum evacuationum, aut spirandi difficultas, aut alicubi imminens, aut facta sanguinis congestio id auxilii postulant; vena in brachio secanda est, et pro symptomatum continuatione, ægri ætate, temperie et viribus sanguinis missio repetenda; quod interdum, cum ingens plethora, aut diathesis inflammatoria subsit, fieri debet tertia, aut quarta etiam vice.”

Also, Hoffmann, *Med. rat.* Tom. IV. de feb. Synocha, p. 336. There is perhaps, nothing more remarkable in the whole history of medicine, than the gradual return by the moderns, after so long an interval, to the treatment, in many respects so rational, that was followed by the ancients in fever, Inter alia, vid. Galen, *Τὴν τῆς θεραπέας μέθοδον*. lib. nonus, cap. V. De ratione curandi febres per venæsectionem et frigidæ exhibitionem. The edition to which I refer at present, is that of Venice, in folio, 1565, in the version of Linacre and others. The Arabians, who borrowed from the Greeks, have also adopted many of their therapeutic views. Avicenna expressly recommends blood-letting and purging in fever. Vid Lib. IV. Fen 1.



It is seldom necessary to bleed children, yet I have sometimes taken away four or five ounces in little boys of five or six years of age, with great advantage. A stout young adult man or woman, will generally bear from eight to sixteen ounces; if the person be very robust, we may sometimes take twenty, but the first proportions, attending to circumstances, need not often be surpassed, and I seldom order more. When we bleed in such cases, a large orifice is justly considered preferable to a small one; and more especially when there is inflammatory determination. A well-fed and robust young man, will obviously require the abstraction of more, than one who has been worse provided with the necessaries of life, and harder worked. Literary men, and anxious timid individuals, in general bear bleeding ill, or do not require it; in fact, in persons not bearing bleeding well, the excitement will seldom run so high as to require it. But as I have said before, we should in all cases, be on the watch to prevent or obviate local complications; and one of the best ways of doing this, when the excitement runs high, is to lower it. When this has been done to a sufficient extent, by bleeding, purgatives, and the means already mentioned, the form here spoken of, will commonly run through its course with little chance of creating alarm.\* It is sometimes, though rarely, expedient to bleed a second time; in this case, half the quantity, may as a general rule be withdrawn. In all other respects, the remaining treatment may be as before. Should local determination to any organ take place, our conduct must vary with the intensity and violence of the attack. If our measures are judicious, and sufficiently energetic, we may indulge a confident hope that we shall at least be able to prevent disorganization of texture, if not inflammation. The functional disorder however, attending inflammation, and even arterial determination, may be so violent as to destroy without proceeding this length: this is particularly true in the case of the brain and its membranes. The

\* Darwin very properly remarks in one of the few available practical observations with which his singular work abounds—"The lancet, with mild repeated cathartics, is the great agent in destroying this enormous excitement of the system, so long as the strength of the patient will admit of evacuations." *Zoonomia*, vol. II. *Theory of Fever*, p. 457.

treatment of inflammation varies according to the stage in which we witness it, and the period and form of the disease in which it occurs. If it take place in a fever of high excitement, it will call for active depletion, local and general; if the general excitement is low as in typhus, or if it come on at an advanced period of the disease, we must deplete with moderation and great caution.\* Indeed, as practitioners are in general well aware, inflammation may co-exist with a degree of general prostration, so great as not to justify debilitating measures of any kind. If inflammation be permitted to proceed unchecked, it will induce this state of adynamia; it will also frequently supervene upon such a state otherwise produced, as has already been more than once observed. It is well known how often typhoid prostration, especially in the old, is superinduced by inflammation not preceded by fever.

The treatment of fever with high excitement, accompanied by considerable determination of blood, say to the head, but as yet without inflammation, should be very decided.† The quantity of blood which we are to take away, must be regulated by the result; some will require the abstraction of more, others of less—say from fifteen to twenty ounces, according to circumstances. The head should be shaved, and frequently sponged with cold lotions of vinegar and water; a linen rag kept moistened with this mixture, and constantly applied, answers very well. A smart purgative of calomel and jalap should be given, so as to procure two or three copious stools: the beneficial effects of purgatives in causing a revulsion from the head are too well known to be insisted on. Pringle says he never knew a fatal case, in which purgatives and nauseating remedies were actively employed, but many in which bleeding was wholly depended on.‡ A second bleeding may sometimes prove necessary, otherwise six, eight, or twelve leeches may be applied to the temples. When we have reason to be-

\* Chalmers in his work on fever, Lond. 1768, p. 79, urges the necessity of pausing before we venture upon bleeding in such cases. Pringle, as I have elsewhere observed, abounds with similar cautions.

† Some writers however, think that fever is always, or at least generally, attended with more or less cerebral congestion. Vid. Percival in *Transact. of Irish Col. of Phys.* vol. I. p. 325.

‡ Principles of pathology, p. 85.



lieve that the brain is seriously affected—that inflammation of its substance, or of the meninges, has taken place, with intense and deep-seated pain or oppression in the head, injected eyes, and the other marks of cerebral affection, we should act accordingly.\* We must take more blood and oftener, from the arm, or from the temporal artery; we must apply more leeches, and more frequently, to the temples; and we may cup the back of the neck. I do not order blood in such cases, to be taken from the jugular vein; but if the practitioner see fit to bleed from it, he must be cautious to make pressure on one side of the neck only. Some apply pressure with the thumb, which is perhaps the better way. I knew a person who was fond of taking blood from this vein, and he was accustomed to pass the bandage under the opposite arm-pit.†

\* Acerbi makes so valuable a practical remark, touching the treatment in this case, that I cannot forbear pointing the attention of the reader to it. After very properly mentioning, that we are called upon to bleed copiously, “*salassare a larga mano*,” he goes on to add, that though the inflammation may be subdued, the cephalalgia may remain and decline with the fever, and consequently that the mere existence of pain in the head does not alone indicate farther blood-letting. “*Mi sia però lecito di osservare, che la cefalalgia non ando rigorosamente diminuendo in misura della evacuazione del sangue, bensì in ragione dell andamento della febbre, che come tutti i medici sanno, ha suo principio, incremento, stato, declinazione e fine.*” *Annotazioni de medicina pratica*, p. 73.

Speaking of this state of things, purging and bleeding having been premised, Sydenham likewise, passes a very similar remark—“*Aliis in morbis quid hoc profecerit nescio. Illud satis scio ex diligenti observatione mihi adstipulante, quod in Febre, de qua jam agimus, dictum symptoma (stupor, coma) post usurpatas evacuationes generales, venaesectionem dico, et enemata, solo tempore feliciter solebat vinci.*” *Op. om.* § 5, cap. II. He repeats the same observation two or three times in his *Schedula monitoria de novæ febris ingressu*, as—“*Quamobrem post evacuationes generales, per venaesectionem et purgationem factas, quantumlibet hoc symptoma (stupor, phrenesis) adstantes perterrefaciat, tota res naturæ et tempori committenda est.*”

I have a case at present strikingly exemplifying the preceding observations. The man has been bled so far as it seemed proper to push the evacuation; he still however, moans frequently from the pain in his head, though it was much lessened by the blood-letting. I may add that the event has been wholly in conformity with my expectations and wishes.

Willis, while treating of the connexion and termination of affections of the brain in fever, observes—“*Phrenitis, aut brevi tempore in salutem, aut mortem, cum febre terminatur.*” *De anima brutor. pars secunda pathologica*, cap. X. *de delirio et phrenitide*.

† Friend in his *Commentaries upon fevers*, (Lond. 1730,) recommends in strong terms, the abstraction of blood from the jugular vein, and at the same time very

The cold dash will be found very effectual in these cases. I have ordered the patient's head to be held over a bason, and caused the contents of a jug or jugs of cold water, to be repeatedly poured on it from a gradually increasing height, with great relief. I consider this better, as well as more convenient, than placing the patient in a tub. Larrey has found the application of pounded ice to the head useful.\* Thus, must we proceed, until the affection is subdued and the pain removed. Frequently, the first bleeding will suffice; but different medical men inform us of cases occurring within their practice, wherein it was found necessary to take away more than a hundred ounces at different times.† Such instances however, are rare, and seldom take place within the precincts of hospitals where the poor are treated; they most frequently occur in the persons of robust and well-fed men. Inflammatory cerebral affections at all events, are more frequently to be found in the over-fed, speculating, and anxious inhabitants of large cities, and among the better classes. As a subordinate means, in such cases, blisters are very proper, especially on the back of the head; but no practitioner of sense or experience would employ them early, or rely upon them alone. Our continental brethren in France and Germany, advise their application to the calves of the legs—a recommendation that is not to be despised, and which I have occasionally carried into effect with much advantage. When we are so unfortunate as to meet with cases in which the inflammation has proceeded to the second stage, with perhaps effusion or

clearly points out the description of cases in which he conceives it to be most necessary. Vid. Comment. II. p. 15, et seq. Grattan recommends the section of the temporal artery in cerebral affections, as preferable to bleeding in the arm. Transact. of the Col. of Phys. in Ireland, vol. III. p. 437. Muir of Paisley, and Mr. Allan, in such cases, also prefer arteriotomy, or blood-letting from the jugular vein. Ed. Med. and Surg. Journ. vol. VIII. and vol. XII. p. 256.

\* “La glace pilée, appliquée, sur la tête après les saignées locales, peut également produire de bons effets; mais il faut être circonspect sur l'emploi qu'on en fait. Mémoires de chirurgie militaire, Tome IV. p. 145.

† Rush states that Dr. Dewees having been attacked by fever with cerebral affection, Dr. Physick drew away from his arm at one bleeding, ninety ounces. See Medical inquiries, vol. IV. p. 239. This is the largest quantity that I have ever heard of being taken at one time; and the infrequency of such very copious abstractions, shows, that in the opinion of the profession, they can be seldom necessary.



change of structure, what are we to do? Our predicament is a very unhappy one. If we use strong depletory measures, weakness and the disease overwhelm our patient; and if we do not, the disease will probably destroy him at any rate. Under such circumstances, if a moderate bleeding can be borne, or a few leeches to the temples, we ought certainly to try these means. We should also employ active counter-irritation in the manner already mentioned; it helps to diminish the general excitement. If we find that the pulse falters, and the strength sinks, we may venture on a little wine, and go on again, if it be necessary, with our depletion. We should do all we can to struggle with the disease. Here it is, that mercury is most expedient. We may give two or three grains of calomel, and half a grain of opium, every three or four hours; we may also apply mercurial ointment to the scalp, and rub a portion of it at intervals, upon the inner surface of the thighs or arms, until the mouth is affected, or the disease yields.\* Sometimes these means will prove successful; but it must be obvious, that when once loss of function or change of structure has proceeded a certain length, no human hand can restore the one, or replace the other. The previous ob-

\* See a very important letter of Dr. Hamilton of Lynn Regis, to Dr. Duncan of Edinburgh, *Medical Commentaries*, vol. IX. on the advantages of calomel and opium, occasionally conjoined with tartar-emetic, in inflammatory diseases. The contents of this letter are repeated in Wilson on the action of morbid sympathies, p. 312; and in Professor Elliotson's tenth clinical lecture on pleurisy. This lecture contains this able Professor's own views on the powerful efficacy of calomel combined with due but not excessive depletion, and counter-irritation, in inflammatory diseases. After relating the details of an obstinate and nearly fatal case of pleuritis which had resisted every means, short of calomel, the patient was ordered five grains every second hour, and next day his mouth became sore—"then, even in the same hour, all the inflammatory symptoms subsided." Dr. Graves is not less decisive as to the efficacy of scruple doses of calomel, so as to affect the system rapidly, and "cure the disease with the least possible loss of blood." See *Grave's Clin. Lect.* Lond. Med. and Surg. Journal, vol. III.; also, on the administration of calomel in acute diseases, *Dublin Journal of Medical and Chemical Science*, vol. VI. p. 57. Consult likewise, Thompson on inflammation, 2d American edit. p. 143. Hamilton affirms that the beneficial results of calomel and opium, in inflammatory diseases, filled him with astonishment, and concludes his letter by saying—"I have only to add, that the subject of it is not the hasty result of a few month's practice, but founded on the solid basis of eighteen years' successful experience." Dr. Elliotson characterizes this valuable communication as containing all our existing knowledge on the subject.

servations apply generally, to inflammation of the brain, when it sets in, at advanced periods of the disease. When the brain or its membranes are inflamed in fever with low excitement, commonly called typhus, our treatment should be sufficiently active; the circumstances of the case will regulate our conduct. We know that inflammation of any kind, in such cases, requires less violent measures. It is extremely difficult, perhaps in many cases impossible, to distinguish the second stage of cerebral inflammation, in which the general sensibility has been diminished by the disease, from that state of prostration, stupor, and nervous functional disorder, which is caused principally by the action of impure and unarterialized blood on the brain and its dependencies, and of which the mental characteristic, as Hildenbrand observes, is marked by utter indifference to all outward objects and circumstances.\* Here, I conceive, the diagnosis and the consequent treatment, must be principally founded upon our previous knowledge of the course of the complaint.† Thus we see similar phenomena taking rise from nearly opposite states of the cerebral circulation, and which surely demand our closest attention to distinguish them. It will be seen from the foregoing observations, that the treatment of the various affections to which the brain is liable in fever, must be regulated by a variety of circumstances, the correct discrimination of which, demands the exercise of all the powers of the most accomplished physician.

The affections of the lungs and pleura in fever, come now under consideration; they consist of venous congestion, arterial determination, bronchitis, pneumonia and pleuritis: perhaps other affections may take place, but if so, they have not

\* Hildenbrand, über den ansteckenden Typhus, Wien, 1814.

† Abercrombie in his valuable work on the diseases of the brain, p. 150, remarks, that if the affection be acute in the advanced stages, we should employ venesection; but if it comes on gradually and insidiously, the case is generally hopeless. He entertains much confidence in the cold dash, to which remedy I myself feel inclined to attach considerable efficacy.

It is remarkable that so sagacious a practitioner as Parry, could hope for any advantage from so very questionable a remedy as compression of the carotid arteries, in cases of excessive determination to the brain, attended or not with convulsions and delirium. Vid. Elements of pathology and therapeutics, p. 297.



been determined by pathologists. Dyspnœa may exist with or without local lesion, as has been already stated. The two first mentioned affections are considered under general heads. A mild, and sometimes a severe bronchitis, exists so frequently in fever, that some pathologists affirm that it is universal. A few contend, very unnecessarily I think, for the existence of a special bronchitis. I need hardly repeat what I have so strongly insisted on—namely, the necessity of paying attention to the state of every organ and function in fever.\* When this is done, the presence of bronchitis, when it does exist, will not escape. The stethoscope should be always at hand. I have already stated that a co-existing cerebral affection may mask the pulmonary inflammation. The deterioration of the process of innervation from the circulation of depraved blood, will have the same result. I have also mentioned that the disease of the lung may be quite latent. These things should be attended to in forming a correct diagnosis, without which, it is needless to observe, our treatment cannot attain the scientific precision and success to which it may be brought. When the bronchial affection is very slight, I generally content myself with adding a proportion of the tartrate of antimony to the patient's purgative, whether it be in solution or otherwise. I sometimes use a preparation of ipecacuanha or squills for the same purpose. In mild cases, these means, in conjunction with the measures indicated by the general condition of the patient, have in the great majority of instances, proved sufficient. In severe ones, a more energetic treatment is called for. If the patient will bear it, and the case require it, I take blood from the arm more or less, according to the sex, age, and strength of the subject, and the period and intensity of the affection. I also apply leeches, from six to twenty-four, over the part affected: sometimes, in robust subjects, when great haste is an object, I apply cupping-glasses

\* "The relations between idiopathic fever and the concomitant local inflammations, are of great practical importance; and the chief difficulty and nicety in the treatment of fever, lie in determining how far the danger depends on such local affections as demand evacuations, and how far as the effect produced on the system by the morbid cause, which will often spontaneously abate, and often demands remedies of the opposite class." Alison's outlines of pathology, p. 206.

to the chest, taking away what I consider necessary. Some order these useful instruments to be placed between the shoulders.\* When leeches are scarce, or are not to be procured—or when from any other reason we do not wish to use them, cupping-glasses are an invaluable succedaneum. Sometimes I employ these two means alternately, in severe cases, and with robust subjects; and occasionally, it answers very well to apply the cupping-glasses over the leech-bites, when the animals have been removed. I generally stupe the bites for a couple of hours or so, with flannel-cloths wrung out of warm water, taking care to hinder the patient's surface from being unnecessarily exposed; and when this operation is concluded, I have the part carefully dried, and a warm linen cloth laid over it.† Soft tow is employed for this purpose in Irish hospitals, and answers very well. Leeches should be employed in children's cases with reserve, as sometimes they may cause the loss of too much blood; the bites should always be attended to, and bleeding stopped if requisite, by a little pressure or other means. They should be employed when practicable, at an hour sufficiently early to have the bleeding concluded, and the patient comfortably settled before his usual hour of rest. I have known blood lost to an unnecessary extent, during the night, from the neglect of this caution.‡ A French pathologist asserts that local bleeding is not preferable to general, because, says he, it can only act on the disease through the general circulation, just as if the person were bled from the arm. The capillaries are first emptied, observes this writer, in local detraction of blood, then the larger vessels, and finally, the sum of the whole circulating fluid is lessened. It

\* *Cucurbitulæ etiam interscapulio et cervicibus affixa, in id salutare sunt*—Sylvius, *Ratio medend. morb. in cephal. curat.* § 4. See Craigie's valuable clinical reports on fever, in the recent numbers of the *Ed. Med. and Surg. Journal*.

† Price on sanguisuction, p. 106. 2.

‡ Derheims gives the case of a young woman who lost her life by the loss of blood, after the application of eighteen leeches, the effusion having been allowed to proceed unchecked, till it was too late to prevent the fatal event. *Histoire nat. et med. des sangsues*, p. 137. An instance of death from the suction of leeches, is given in the *Acta med. Hafnensis An. 1673*, cap. CXXVI. *Ex hirudinibus mors*. An instance of the same kind is mentioned by Larrey, and one, I think, in the thirty-second book of Pliny.



would certainly be very difficult to show how leeches laid on the chest, can lessen the amount of blood in the lungs, otherwise than through the circulation at large, and why they should prove more advantageous than when applied elsewhere, —or than bleeding from the arm—but at all events, I think that the experience of the great mass of practitioners, to which I may be permitted to add my own humble mite, has decided in favour of their utility. After we have taken away as much blood as we find expedient, counter-irritation should be resorted to. Here, we have a choice of means; blisters, mustard sinapisms, tartar-emetic plasters, croton-oil frictions, and oil of turpentine, besides others still more energetic, as, for instance, the ammonical ointment. Blisters perhaps, are among the best applications, but they need not remain on, after the skin becomes red; in young subjects, four hours generally suffice—and in adults, six or eight; they are frequently left on much too long. I have heard practitioners make objections to local counter-irritation, of a similar nature to those already quoted, respecting local bleeding; and in effect, some recommend its application to the legs, as a revulsive equally efficacious as when applied to the breast—without exposing the patient's chest to currents of cold air: practice however, has decided that the local application is on the whole the best.

We cannot doubt that blood-letting and revulsives would alone, in very many cases, operate the resolution of bronchitis; but as we are nevertheless furnished with an additional agent of great efficacy, which enables us to be more sparing of the abstraction of blood, and which is even possessed of much efficiency in cases wherein the state of the patient renders blood-letting impracticable or hazardous, we seldom employ this means exclusively. The remedy which I here allude to, is the tartrate of antimony; and from the high testimony yielded to its powers by the ablest practitioners of America, France, Germany, Italy, and the countries which we inhabit, there can be little question of their reality. I have in numerous instances operated the resolution of pneumonia and bronchitis, by the exhibition of this substance, in conjunction with depletory measures, too moderate to have proved alone sufficient. It is not long since I received two patients in succession,

under my charge, both of whom laboured under pneumonia with incessant cough, violent and distressing dyspnœa, and high fever. The administration of a solution of this salt, with the moderate abstraction of blood, sufficed to resolve the urgency of the inflammation—in one case in twenty-four hours—and in the other, in which the disease was more advanced, to bring about a progressive and happy convalescence.\* I generally give it in some aromatic solution—peppermint-water answers very well, of the strength of about a grain to an ounce of fluid, a table-spoonful every half-hour. In very severe cases, when it is desirable to make a rapid impression on the disease, I have administered this dose every quarter of an hour, for four or five times. Occasionally, patients will vomit—very often they will not; if they knew that they were taking an emetic, they would doubtless throw off much more frequently, owing to the influence of imagination. In moderately severe cases, a solution of half the preceding strength or even weaker, and given at much longer intervals, will serve our purpose; in other respects, we must be regulated by age, sex, and idiosyncrasy. In my opinion, it is quite needless to give the enormous doses employed by Rasori and other Italians, as well as by some French practitioners, their followers.

If the immortal Lænnec did not discover the admirable utility of this active medicine, he has the merit of pointing out and extending its efficacy by his illustrious example. I do not think that the vomiting hinders by any means, the efficacy of this preparation, as some seem to think. The tolerance, as it is called, or absence of emesis, is a contingent condition that is not indispensable. Some however, suffer so much from the disturbance produced by incessant throwing off, notwithstanding the exhibition of the salt in effervescent draughts, or in combination with aromatics, as greatly to restrict its utility in their cases.† The

\* The details of a remarkable case of double pleuro-pneumonia, with effusion, successfully treated by Piorry with bleeding and the tartrate of antimony, are related in the *Lancette Française* for 1833. Similar facts however, are scattered over the French Journals.

† A tolerable summary of the virtues which the school of Rasori attribute to this substance, in inflammatory diseases, will be found in the following remarkable passage—"Il fatto appunto ha dovuto convincerlo, che il tartaro stibiato non è solamente tollerato nelle malattie infiammatorie, e tanto più, quanto la condizione o diatesi



action of vomiting however, is frequently of admirable utility, by freeing the bronchial cavities from the mucus by which they are not unfrequently clogged, to the great prejudice and discomfort of the sick.

What I have said of the treatment of the severer forms of bronchitis, applies with little variation to that of pneumonia. When this formidable complication presents itself, we must employ every means to get rid of it; and the sooner we obtain a knowledge of its existence, with so much the more certainty may we calculate on success. The simple determination of blood is much more easily removable than the solidification or hepatization of the lung—and this, than the further stage of purulent infiltration. Nevertheless, we should try our utmost in all these cases, to bring the patient through—too happy if violent functional derangement and total loss of structure, do not frustrate all our efforts. In the advanced stages of pneumonia, attended with prostration, we can hardly venture on the abstraction of blood, or even the application of leeches; here however, the tartar-emetic still continues its efficacy, but we must be cautious how we lower to extremity, the already far exhausted powers of the patient, by the incautious production of excessive nausea, which, as we well know, is itself a debilitant of the first order. Here, it will be for the practitioner to consider how far he may trust to local depletion, judicious counter-irritation, and the exhibition of opium, or calomel and opium, with the occasional employment of wine and other stimuli.\* How far this temporizing practice is efficacious, it is difficult to say; certain it is, we must not let our patient die even with pneumonia, if a little wine will protract life—but when the disease proceeds to such extremities, I am afraid that the issue does not lie much within

flogistica è più forte; che non solamente non genera nè gastrite, nè enterite, ma che giova senza produrre nè vomito, nè evacuazioni, perchè atto a correggere l'effetto degli stimoli, od a frenare la condizione flogistica; perchè atto ad agire sul materiale organico, o sulle fibre in maniera, da mutare e correggere quelle intimi condizioni, dalle quali dipende la soverchia loro attività, ed il flogistico eccitamento." Tommasini, sullo stato attuale della nuova patologia Italiana, p. 118.

\* The employment of calomel and opium in inflammatory diseases after the requisite evacuations, as I have remarked elsewhere, has many adherents. See Elliotson's Lectures, Lancet.

human regulation. Some cases however, apparently desperate, will come round, and others, in spite of our best efforts, will terminate fatally.\* In all cases nevertheless, it is the duty of the physician to do his very utmost to save his patient's life, and he can do no more. When both lungs are affected, or when the whole of one lung is involved, the disease is by so much the more serious. The great thing is to see the patient as early as possible. Many perish from delay; and I am persuaded that very many persons sink under pneumonia in fever, in whom the disease has never been suspected. How distressing it is to the feelings of any man of common humanity, to witness a person irrecoverably gone in a disease, a little earlier attention to which, could it have been paid, would have ensured a return to health. Time, as Stahl observes, is the grand element in the treatment of acute diseases.† I shall never forget the case of a fine young woman who was brought into the hospital under my charge, with extensive pneumonic hepatization. The case was so far advanced, that my utmost efforts were fruitless; had I seen her earlier, she would in all human probability have recovered. I have witnessed frequent cases of this description, and every observant practitioner must have done the same.‡ It is true, we may have many cases of fever before we encounter so severe a complication as the preceding, but that is no reason why we should not be ready to meet with and combat it, when we do come in contact with it. A medical man should be prepared for every contingency—if he is not bound to be so, I would like to know who is?

So far as my own observation extends, inflammation of the

\* A paper, über Typhus abdominalis, by Becker, *Medinische Zeitung*, dritter Jahrgang. No. 31, gives an interesting example of this unhappy predicament. The fever was so violent, that emetics, blood-letting, leeches, calomel, and nitre, were useless, while stimuli of every sort, arnica, serpentaria, camphor, and wine, were invariably pernicious. “Die Behandlung mit Brechmitteln, Aderlass, Blutegeln, grossen Dosen Calomel, Natrum nitricum war ohne Nutzen, und die Anwendung von Reizmitteln, Arnica, Serpentaria, Camphor, Wein offenbar immer schädlich gewesen.

† *Tempus est remedium magnum.* Stahl, *Ars sanandi morbos cum expectatione*. Parisiis, 1730, p. 122.

‡ Since writing the above, I was called to see a boy of twelve years of age; but hepatization and mortal prostration had already set in. He lived but a few hours afterwards. I need hardly observe that I neglected no means which I thought might be at all calculated to preserve his existence.



pleura is rare in fever.\* Where it occurs, the method laid down for pneumonia will serve as a general index to the mode of treatment.† I would keep up a very active counter-irritation over the spot, also leeching and cupping, with general bleeding if necessary. Purgatives should be cautiously used; the same rule extends to pneumonia. I have seen considerable injury occasioned in both diseases, by their ill-timed and excessive employment.‡ The antimonial solution is less useful than in pneumonia, but by no means inefficacious, since it is obvious enough, that it will lower the general excitement usual in inflammation, and thus re-act on the local affection; we should also recollect that the pulmonary parenchyma is not unfrequently more or less affected in pleuritis. I have used it with much advantage, in combination with other measures, in my own case, during a smart attack of this disease which I experienced some years since. It should ever be the strenuous effort of the practitioner to prevent chronic pleuritis. I need not however, enlarge further on the subject in this place.

It is hardly necessary to observe, that typhoid pneumonia—or pneumonia occurring in fever of low excitement and nervous prostration, or in the advanced stages of fever presenting this state, but which has commenced with much excitement, will not bear the same active treatment as the ordinary form. I have seen moderate venesection of use, along with the antimonial. Local depletion will sometimes be preferable, and counter-irritation. Sometimes, there is an objection to leech-bites from the state of the patient. If a blister is employed, it should only be kept on, until the skin is red—otherwise a piece of

\* “Evidence of inflammation of the pleura or pericardium is very rarely seen indeed, after idiopathic fever.” Alison’s outlines of pathology, p. 179. The former is spoken of however, as somewhat frequent in his experience, by Hannay: Glasgow Medical Journal, vol. II. p. 298.

† Peripneumonia, remediis prope iisdem, quibus pleuritidis curatur. Sylvius, Ratio medendi morb, curatio peripneumoniæ.

‡ Baglivi, as is well known, warns us against the excess of purgatives in pleuritis. The able commentator on Good’s practice of medicine, writes thus—“The editor has seen two cases of pneumonia very lately, in which the expectoration seemed to be stopped by active purgatives, and the patients, though already benefited by bleeding, suddenly became worse and died. Vid. Good’s Study of Medicine by Cooper, 3d ed. vol. II. p. 474.

flannel, dipped in turpentine, and covered with oiled silk, may be retained on the chest until sufficient local irritation is produced. I have seen very moderate depletion in the pneumonia of advanced fever, suffice to bring it to a fortunate termination. I once attended a case of this kind, in which I had to give wine the next day after bleeding; a happy expectoration took place of the characteristic aspect, and the patient recovered. I need not repeat the general remarks already passed, which sufficiently apply here.

I now come to the consideration of the abdominal affections. Formerly, we did not pay sufficient attention to these complications, and we are principally indebted to the French pathologists, and in particular to the indefatigable zeal of Broussais and his numerous adherents, for making them so well known to us.\* The subject has been since taken up by numerous French and British practitioners, who seem to have determined, almost all that can be known, with precision on the subject. It is to be regretted however, that neither the therapeutics nor the diagnosis of these complications, has at all kept progress with the morbid anatomy of them. We can hardly determine before hand, with any thing approaching to accuracy, the form under which they exist, or the period at which they commence. It has been already shown, that the state of the tongue is a very imperfect criterion to go by, though doubtless its appearance must be more or less regulated by the condition of the intestinal canal. Tenderness of the epigastrium on pressure, is a more certain, though far from unerring index. However—I make it a general practice, when there is a very foul tongue, with considerable general excitement, a full rapid pulse, a tense and burning skin, especially over the epigastrium, along with shrinking and pain when this part is pressed, to order twelve or more leeches; and I take care, as I have before recommended, that they shall be applied soon enough to have the operation and the subsequent fomentation, which should last two hours or so, finished before bed-time.†

\* See Bright's reports, vol. I. preface.

† An able practitioner lauds in high terms the early application of leeches in fever—" Leur application est suivie d'un succès vraiment étonnant, quand la phlogose



No patient should be covered up for the night, on whom there are leech-bites oozing blood. If one or two continue to give out a little, some cobweb, and the pressure of the finger, or else a piece of sticking plaster, will commonly stop the effusion; I never but once, met any leech-bites so obstinate as to call for either a ligature or pointed caustic, which some have found it necessary to employ. In children, the hæmorrhage sometimes proves intractable; and for this reason, it is usual, when practicable, to place the leeches over a compressible part. I prefer employing small leeches for children, under the impression, that the triangular apertures which their bite occasions, are smaller and less troublesome; but it is not easy to know large from small, as at different periods, one and the same leech will appear of different sizes. Broussais once lost a young recruit by incautiously leaving the leech-bites in stupe all night: the man was found dead in the morning, and the bed deluged with blood: such cases have occurred to others, as I have already mentioned. I cannot see the necessity of covering the abdomen with leeches, as some recommend, except in cases of peritonitis or enteritis, which I do not here speak of, and I think a couple of dozen should in most cases prove sufficient. There is a patient, at the period in which I write this, in the hospital under my charge, who is perfectly convalescent. When brought in, five or six days after the fever commenced, his face was injected, the pulse quick and full; there were also raving delirium, and inattention to any questions put; he could hardly hear, yet shrunk a little, and seemed to feel pain when the tense epigastrium was pressed. I ordered the detraction of twelve ounces of blood from the arm, and next day twelve good leeches to the epigastrium, whose bites were well stuped, and a moderate purgative, the state of the bowels not counter-indicating it, and cold lotions generally. On the ensuing morning, the delirium had ceased, the skin was much cooler, and he could hear and reply rationally to my questions; in a few days the

n' a point altéré la texture des parties qu'elle occupe." Barbier, *Mat. méd. seconde ed. Tome II. p. 570.* Some writers exclude venesection altogether in favour of leeches. Vid. Reid's *Pathol. and Treat. of Fever; Transact. of the Col. of Phys. in Ireland, vol. III. p. 71.*

convalescence was far advanced, and his after recovery was perfect.\*

We need not be afraid to push our local depletions, so long as the general excitement and local pain persist; but it will not do to persevere in them when the excitement subsides and the pulse sinks. If the tenderness of the abdomen should continue, we may employ a few leeches and the terebinthinate application, in the manner already described. If the patient's strength flags considerably, we should desist, in my opinion, from further blood-letting.†

Diarrhœa, or increased exhalation from the mucous membrane of the intestinal canal, is justly considered symptomatic of a local affection; this, however, may be functional or otherwise. When the fever runs high, and the patient can bear the discharge, I generally let it subside of itself, which, in most cases, it soon does, employing at the same time, the general antiphlogistic measures already mentioned. When the general excitement however, is low, and the strength and pulse flag, while the discharge continues to weaken and distress the patient, I do not hesitate to stop it.‡ In ordinary cases, a pill of one grain of opium combined with two or three grains of the extract of hyosciamus, given in the forenoon, or at bed-time, as the case may be, and repeated, if necessary, in twelve hours, will prove sufficient. In a few instances, I have given

\* Since writing the above, I have witnessed the supervention of enteritis in fever, in the case of a poor lad who had been a hawker of hard-ware. Bleeding, both general and local, counter-irritation, and the exhibition of calomel and opium, proved inadequate to check the violence of the disease, or avert a fatal issue. The friends unfortunately, would not permit a post-mortem examination.

† There is occasionally, as Stokes has observed, an insidious and temporary relief from blood-letting in such cases, which must sometimes I fear, have led practitioners to push depletion to the production of dangerous anemia. Vid. Stokes' Report of the Cork-St. Fever Hosp.; Transact. of the Col. of Phys. in Ireland, vol. II. p. 461.

‡ As Alison has remarked, the common mention of diarrhœa by the French pathologists, Andral inter alia, would seem to shew the more frequent occurrence of this complication in France than in Britain. Vid. Ed. Med. and Surg. Journal, vol. XXVIII. p. 258. On the other hand, the same judicious writer observes, that effusion in the head is more frequent in England than France. Certainly, the variable occurrence of these affections in one and the same disease, in different countries, and under different circumstances, is a subject of much interest and importance, but one as to which materials for coming to just conclusions on, do not as yet, fully abound.



four of these pills to an individual during twenty-four hours. In a case now in hospital, the man came in with a diarrhœa, which distressed him exceedingly; he would have a dozen of liquid stools, or more, in the twenty-four hours. As the fever was low, and the discharge had weakened him very much, I proceeded to administer opium night and morning, which had to be repeated for three or four days before the discharge was sufficiently moderated; he is now convalescent; and the suppression of the diarrhœa has only served to produce unmixed good. A case lies beside him in which the circumstances were very similar. The diarrhœa was urgent and distressing, and the thirst great: the same treatment led to equal success. In the so-styled complication of fever with dysentery, I should conceive that the treatment ought to be regulated by similar principles. The application of leeches to the anus, so extensively practised in France, in the diarrhœa of fever, is not much followed by British practitioners. Andral however, does not seem to lay much stress on it.

The bowels should be kept open when constipation exists, although there may be grounds for believing in the existence of an intestinal complication. Sometimes the constipation is excessive, and when ordinary purgatives, in ordinary doses have failed, I have found a single drop of croton oil in an ounce of olive oil, produce an easy and moderate discharge, with great relief. Copious and mild enemata are very useful additions in such cases.

A multitude of other remedies have been exhibited in the various forms of intestinal affections, but I can lay my hand on very few that I would repose much confidence in; I believe that more may be often accomplished under such circumstances, by attending to general indications, than in the practice of such uncertain and indeterminate polypharmacy. Ordinary inflammation rarely, I believe, takes place, in the intestinal mucous membrane during fever; small injected patches will indeed, be found here and there after death, and sometimes there are even softened portions.\* It is difficult

\* The local effects, as Alison observes, produced by the inflammations that occur in the course of fever, differ materially from those which follow inflammation of the same parts in a system free from general fever. Alison's pathology, p. 205.

however, to decide in many cases, whether the said patches are marks of inflammation or not; most decidedly, they are frequently not so; and as for the softening, there is every reason to believe that it is in some instances a mere cadaveric alteration.

When the alteration of the mucous follicles, sometimes called dothineritis, ensues, or ulceration sets in; I do not know any mode of treatment short of constitutional measures, that can prove very advantageous. It seems to run through a certain course, and to terminate with, or shortly after the fever. Extensive sloughing and ulceration, as Bright, Andral, and others, have pointed out, will sometimes take place, while we remain nearly or totally ignorant of their occurrence.\* Even when we have reason to suspect their existence, what specific medication can we adopt, with any thing approaching to certainty, in favour of its utility. I would say, diminish excitement when excitement exists; too frequently however, we have to support the strength rather than deplete, and aid the system in its struggle with these serious alterations, and the functional derangement that is consequent on them. Should perforation and peritonitis ensue, which however, rarely happen, certain death must almost necessarily result; we may give opium nevertheless, and any thing else which may have a tendency to alleviate the sufferings of the patient. I saw a case apparently of this kind, about two years since. The patient was a decent serving-woman—had had fever, but her convalescence did not progress. Suddenly, alarming prostration and great abdominal pain took place, which were shortly followed by death. Her friends would not permit an examination, and I concluded that ulceration and perforation had taken place. The manner of using stimuli and tonics during the eruptive and ulcerative stage here spoken of, will be mentioned under the general management of severe fever, to which I am shortly about to proceed.

\* See Bright's reports of medical cases, Lond. 1827, vol. I. p. p. 178, 194, et seq. This highly excellent work is rich in pathological and therapeutic facts, relative to fever. The copper-plate illustrations add greatly to its value. See also, Carswell's pathological illustrations, which I regret exceedingly not to have at hand to refer to textually.



A form of fever with considerable disturbance of the digestive functions, general prostration and low excitement, has been described under the head of gastric fever. But after what I have said, and what I am about to say, it will be quite unnecessary to treat of this form separately, since all its pathological conditions and therapeutic indications, will be included under the general head, as I have proposed to myself to accomplish, with regard to all the varieties. When vomiting occurs, it may either prove a sympathetic affection, or arise from gastric irritation alone. The treatment will depend upon the general constitutional indications. Sometimes, leeches are expedient, or cupping : occasionally, dry cupping will prove a very useful remedy in such cases. I have however, frequently arrested this troublesome complication by simple counter-irritation, awakened by the aid of a sinapism, an oil of turpentine embrocation—and in more obstinate cases, by the application of a blister. Along with these, an occasional effervescing draught will at times, prove not less grateful than efficacious.\* As one affection may supervene upon another in the course of fever, and in point of fact, frequently does so, it becomes imperiously necessary to keep a steady look-out for such contingencies, and meet them according to the exigencies of the case. In like manner, various affections may commence singly, at any period of fever, and we may be first called upon to treat them at varying stages of their progress : in all these circumstances we must act according to the aspect of the case. A double or triple combination may set in simultaneously, or nearly so, at an early period—as of the head and lungs—or one of these two, along with an affection of the intestinal canal—or of all three together. The treatment of such complications is very arduous ; general depletion however, with the local detraction of blood, counter-irritation, and the other means before-mentioned, are all that we can have recourse to ; luckily the treatment appropriate for one, is in some measure, the same for all. Should prostration ensue, we must endeavour to support the strength. In moderately severe cases, and where the strength of the

\* See Bright's medical reports on this head, vol. I. p. 180.

patient proves adequate to bear up both against the disease and the treatment which we institute to quell its violence, we may hope for some success ; but when the complication is exceedingly severe, our prospect of success becomes proportionably limited ; still, it is our duty to exert ourselves to the utmost to save life. I may here remark, that such joint affections are less rare than what is commonly supposed ; it generally happens however, that one is more prominent than the rest, which are consequently more or less masked ; but as the treatment for the one, if successful, generally tends to eradicate the others, their existence is sometimes not discovered until revealed by a post-mortem examination in the event of death. All these things afford us strong incentives to frame a careful diagnosis.

I shall now attend to the treatment of fever with low excitement, combined with excessive lesion of the processes of innervation, whether it exhibit this form nearly from the commencement, or not until some after period of the disease.\* The treatment of fever with high excitement, and of fever, whether with high or low excitement, combined with inflammatory complication, has already been disposed of. This arrangement, it is obvious, would not meet with the approbation of those individuals who consider fever as the result of inflammation, or of those who overlook this combination ; but as my grounds for adopting it have been often stated, I need not repeat them here. Notwithstanding the profuse variety of remedies recommended and employed in fever, their action, however seemingly diversified, may, as an able writer has well observed, be reduced to a few general heads.† The views which I entertain on this subject, will fully appear from what I have stated, and what I am about to state, before concluding this article. I may as well observe however, that I have no

\* See Holland's inquiry into the principles and practice of medicine, p. 226, for several good observations on the treatment of typhus.

† *Innumera, quæ vel provida Natura suggesserit vel humana industria comparaverit, remedia, quamvis admodum inter se diversa, tum quod ad cæteras et magis manifestas dotes, tum maxime quod ad vires suas medicinales, tamen haud inepte ad pauca genera referri possunt, secundum effectus generales atque manifestos, viresque simplicissimas quibus in corpore humano pollent.* Gregory, *Conspectus Med. Theoret. de Therapeia*, § 946.



peculiar theory to support, or hypothesis to propound : I wish to state the simple results of my observation, and endeavour to recommend a line of practice in accordance with correct principles of pathology.

If we could foresee the probable course and duration, as well as the complications incident to individual cases of fever, it would be of great assistance in enabling us to decide upon a superior line of practice. Many of the phenomena of fever however, are regulated by laws, with the mode of operation and origin of which, we are very imperfectly acquainted. Nevertheless, something lies in our power in this respect, by making ourselves acquainted with the age, constitution, and mode of life of the individual, together with other circumstances already noted. The constitution of the prevailing epidemic, in case there should be one, must be attended to ; but even in epidemics, the form of fever varies exceedingly in different individuals. Hence, we should never be led away by names, but in every case, observe, think, and act for ourselves.\* I conceive it may be established as a general rule, that when the excitement is very high at the beginning of any form of fever, it is our duty to moderate and more or less repress it. Our measures however, for doing so, should be regulated by circumstances. Children, women, and weak subjects, do not require, nor indeed bear, extensive depletion. When, from the epidemic constitution or other circumstances, we have reason to apprehend the speedy setting in of great nervous prostration and low excitement, we should detract blood, whether locally or generally, with great moderation, or refrain from it altogether ; we shall be the more justified in the latter course, when no inflammatory complication co-exists. In fact, our conduct must be regulated by the circumstances of the case ; to neglect these, to treat a mere name, is to run the greatest hazard of committing the most direful errors. Some people will absolutely bear no kind of depletion in fever,

\* As a very judicious writer has observed, we must vary our treatment with the circumstances of the case ; and as no one man can possibly have experience of all the forms of disease, it is absurd to endeavour to make our own partial observation merely, the standard of practice over the globe. Sim's observations on epidemic disorders, Lond. 1773, p. 9.

even when inflammation co-exists. Hard drinkers, persons with broken constitutions, those who are bowed down and oppressed with anxious cares, severe and long-continued intellectual exertion, must be treated with great care and caution, if we mean to save their lives. Rostan mentions that he has seen Russians, Tartars as he styles them, allowed alcoholic drinks by their own medical attendants during inflammatory attacks, while those treated in the usual way when similarly affected, by French practitioners, almost all perished.\* It is owing to this want of circumspection that so many have been destroyed in fever, by the misplaced employment of the lancet and antiphlogistics in one case, and of wine and stimuli in another. And such must in some measure, ever be the result of a mode of treatment, founded upon the assumption that fever is a kind of permanent entity, without considering the correlative condition of the patient. The persistence unchecked, of very high excitement in the onset of fever, is of itself, apt to entail functional exhaustion and death, in the sequel, through the medium of organic change or otherwise. In many cases however, the excitement is little or none, at first, and great prostration is apt to ensue, sometimes with, and frequently without any tangible organic lesion. Well then, if the fever commences with a degree of excitement which will bear the lancet, let us employ it with circumspection, to the extent already indicated; if there be local irritation, we should have recourse to cupping, leeching, and counter-irritation. If the excitement is moderate, the lancet must be guardedly handled; leeches will frequently prove very useful, when general blood-letting would be inappropriate. Sometimes, a few leeches will relieve a local affection without producing general weakness, when a greater number would be improper. It is quite obvious that blisters should not be employed during the existence of high excitement, with or without local inflammation, for as Cullen judiciously observes, they can only add to it. If the lancet be freely employed, when the general excitement, local inflammation, or greater or less congestion, do not warrant it, mischief must result,

\* Cours de médecine clinique, quatrième partie.



whether in the shape of excessive prostration of strength, retarded and prolonged convalescence, or even death.\* It would seem however, that small losses of blood, say from four to six ounces at the beginning of fever, can be borne with impunity in many cases, though they may be otherwise quite unnecessary; this must frequently have been the case I conceive, in Mills' hospital-practice, in which venesection was so often employed. Even in cases, in which the detraction of blood might have been proper at first, the period generally soon passes away, during which the high excitement that should justify it, continues. The duration of this period however, like almost every thing else, is variable, and I have sometimes bled people even so late as the eighth or ninth day. Some individuals, it would not be proper to bleed after the third or fourth, and very few after the sixth day: as to this however, Galen's observation is appropriate even to this time, that we should be regulated more by the condition of the patient and the circumstances of the case, than by the number of days that have elapsed. The existence, or the after occurrence of inflammation however, as before said, may render it proper to take away blood, locally or generally, at a comparatively advanced period of fever.

An emetic is frequently a highly important therapeutic agent at the commencement of fever, whether arising from contagion or other sources. Tuomy is of opinion that its early employment—that is to say, during the first two or three days, after which it will seldom suspend fever, or with certain given exceptions, be exhibited with propriety, is often capable of saving many lives. I confess I think that he is right, for instances are very numerous indeed, wherein the exhibition of a vomit has sufficed to cut the fever short.† In a disease so formidable, and of such uncertain issue, I think

\* *Venæ-sectio in exanthematicis hisce febris cum summa circumspectione administranda.* Hoffmann, *Med. rat. Francofurti ad Moenam*, 1738, Tomus IV. p. 240.

† Cheyne observes, when detailing the nature and treatment of what he calls nervous or malignant fever—"All the evacuations must be gentle, except vomiting, which may be repeated freely through all the stages, if the symptoms require, and the strength permit, but especially in the beginning." *The English malady*, Lond. 1733, p. 231.

that it would be proper in many cases, when we can get seeing the patient early enough, to have recourse to a brisk emetic of ipecacuanha and antimony, as I have elsewhere mentioned; it unfortunately happens however, that advice in the great majority of cases, is not sought after by rich or poor, till the complaint has made some progress. The latter, frequently indulge in a notion that it is a common cold—and others of all classes, go about with the foolish design, as the last-mentioned writer has justly observed, of throwing it off.\* The nature of the salutary shock which enables the patient to heave off the fever as it were, when an emetic proves successful, is difficult, perhaps impossible to explain, as is the action of perturbing remedies generally. It must be confessed, that epidemic or contagious fever occurs more frequently under the form of low general excitement, and more or less considerable nervous disturbance, than the common run of fever existing under ordinary circumstances; and I need hardly observe, that such being the case, we must pay proportionate attention to the fact in our line of treatment.

The utility of purgatives in fever is now so generally, I might almost say universally conceded, that notwithstanding the opposition to their employment by some French practitioners, the propriety of their exhibition may be said to be established. It is certain however, that this practice, like every other, may be abused; but it is satisfactory to think that the administration of purgatives is regulated by principles so nearly approaching to correctness, as to enable one to practise with tolerable satisfaction. It is at the same time, an interesting circumstance to know, as I have elsewhere remarked, that the depletions produced by venesection and cathartics, have advantages which are, in some degree, convertible, and that fever may be cured by the former, though purgatives be nearly or wholly omitted.† A pathology of this disease, founded on the presumption that it was caused by a gastro-enteritis, had a necessary tendency to render the support-

\* Treatise on the principal diseases of Dublin, p. 140.

† The uses of purgatives, says O'Brian, must be regulated by the other depletive processes resorted to at the same time. Report of the House of Recovery: Transact. of the Col. of Phys. in Ireland, vol. III. p. 501. Id. Brown. Vid. note, p. 134.



ers of this hypothesis chary, in bringing what they considered irritating substances in contact with the inflamed intestine. However, as this doctrine has been disposed of before, I need not dwell on it here, further than to state that it has had a beneficial effect in restraining the undue administration of purgatives in fever, presumed to be complicated with follicular lesion. Hamilton's work has had considerable influence in recommending and directing their more general employment. When fever commences with much excitement, and in robust subjects, we may use purgatives with tolerable freedom, nor fear to excite a considerable serous evacuation, in conjunction with a discharge of the fœcal contents existing in the intestinal canal. Their exhibition will cool the patient, lower the fever, and perhaps, moderate or do away with the necessity of sanguineous depletion, particularly in very young subjects. In how many cases, as the author last named observes, do we obtain the cure of fever by the employment of a smart purgative at first, followed by gentle ones afterwards. We can begin with calomel and jalap or rhubarb, followed by an acidulated solution of some of the neutral salts—or one of these, combined with the infusion of senna, of which the occasional and moderate exhibition, keeps up a gentle and beneficial action of the bowels throughout the complaint. I have treated very many cases of mild fever in this way, with perfect success, and without either blood-letting or stimuli, first or last. In young or delicate subjects, cream of tartar, with or without a little magnesia to saturate the excess of acid, answers the last purpose very well. If a slight catarrhal affection or bronchial irritation, co-exist with the fever, I like to add a varying but small proportion of the tartrate of antimony, to the solid or fluid purgative; it acts beneficially on the chest, and enhances the efficacy of the aperient: it also helps to diminish the general excitement.—When there is low excitement, whether early or late, as frequently happens in the fever called typhus, we must beware of serous or excessive purgation altogether, as it sometimes produces great mischief in the form of considerable, and even irreparable prostration; in fact, a man may have his strength as effectually lowered, even to the production of deliquium, by cathartics as by venesection;

and no judicious practitioner should risk his patient's well-being, by inattention to the mode of their exhibition.\* Some patients require more, and others less purgation, according to the tendency of their bowels to costiveness or the contrary; but it may be laid down as a general rule, that in fever of low excitement, or where debility exists, we should prescribe such aperients and such doses, as will procure a moderate discharge. I would not allow constipation to exist in fever—but I would be cautious how I administered purgatives during the existence of diarrhœa. In cases of considerable prostration, where it is desirable to open the bowels, I sometimes find warm-water enemas very serviceable; in these instances also, the combination of aromatics with purgatives, has been advised with much propriety. A practical writer strongly recommends the exhibition of cathartics in every stage of fever, and even in the worst forms of typhus: their employment however, should be determined I conceive, by the principles here laid down.†

In the case of hæmorrhage from the intestines, the indication will obviously be, to suppress it. If local inflammation and general excitement go together, which in this case they seldom do, local and general depletion, with counter-irritation, will be very necessary; if, on the other hand, the hæmorrhage, which as Andral has abundantly shown, may take place with or without local intestinal lesion, co-exist with great general debility and prostration, the utmost attention will be necessary to prevent the patient from sinking. When I meet with

\* An enlightened practitioner, whom I have had occasion to quote more than once, says, that some of the worst cases of fever which he ever witnessed, were rendered so by the production of hypercatharsis, from the unnecessary exhibition of violent purgatives. Transactions of the College of Physicians in Ireland, vol. I. p. 337. Grattan says that many cases were brought into the Cork-street hospital, which even at first would not bear purging. Id. p. 468—In all things, the physician must be regulated by circumstances. In medicine there is no special rule absolute. He who would lay down the same line of treatment for the victim of poverty, hardship, and anxiety, who are seized with fever, as he would for the robust, high-fed, and fortunate, when affected with the same disease, must be very destitute of discrimination indeed. In truth, medical science is eminently the science of circumstances; and the more closely we are regulated by them, with so much the more certainty and advantage shall we conduct our practice.

† Pring's principles of pathology, p. 99.



such cases, I order wine or wine-negus, and sometimes brandy-punch; also a grain of opium every six or twelve hours, together with animal jellies, and nourishing soups. The indications customary in cases of extreme weakness, must all be sedulously attended to. Drastic purgatives, or purgatives of any kind indeed, while this debility persists, must be altogether proscribed; and we may feel happy, when we are able to preserve our patients on any terms. When meteorism arises in the advanced stages of fever, cathartics are contra-indicated; the patient's strength must be supported, and stimuli cautiously administered according to circumstances.\* Piorry† and others, have found the introduction of a tube high into the rectum, by furnishing an issue to the pent-up gas, to produce considerable mechanical relief: and Tuomy gives an instance, wherein the application of a wide linen bandage swathed round the abdomen, was very advantageous.‡ One of the most efficacious of the internal remedies, appears to be the spirits of turpentine.§

The therapeutic indications which regulate the administration of aperient medicines, though generally clear and precise, are not always so; under certain circumstances for example, when judiciously exhibited, they seem as in the close of fevers, to act as stimuli; at the onset of these diseases, they are given with another intention. In the beginning of fevers, as I have said, copious laxatives may be used as a depletory means to the extent which we may require; at this, and all other periods, they serve to clear away the contents of the bowels—whether these be the remains of food, or the various morbid secretions and excretions which are poured out

\* That excellent old writer, Harris, warns us against the excessive exhibition of stimuli. Interim (says he) febris ex suâ naturâ scœpissimè mitis, nec mali omninò moris, ex ipsa methodo verè maligna (si quæcumque alia) solet effici. De morbis acutis infantum. Lond. 1689, p. 86.

† Clin. med. p. 25.

‡ On the diseases of Dublin, p. 19.

§ See a case in Graves' Lectures, Lond. Med. and Surg. Journal, vol. II. p. 781, in which, on the forty-second day, the patient was affected with diarrhœa, his belly enormously swelled, and apparently moribund. The injection of an ounce and a half of turpentine, was followed by the discharge of a vast quantity of wind, the cessation of the delirium and subsultus tendinum, and finally, a perfect crisis by sweating.

into them. Given thus, they will undoubtedly abate the violence of fever in most cases, and in many others, limit its duration, and lessen the probability of serious complications; it is reasonable also to think, as Hamilton observes, that the maintenance of the natural peristaltic action, and the prevention of the stagnation of the contents of the intestinal canal, must prove useful.\*

When the excitement has been properly moderated, and the bowels more or less freely opened, a period of greater or less duration frequently takes place, in which, besides the personal attentions always required by the patient, little remains for us to do, besides keeping up a vigilant look-out. We are not unlike the mariner in a tempest, who has trimmed his ship as well as he can, to meet the coming tempest; and who, when every thing that human ingenuity can suggest, has been performed, must trust to the strength of his vessel to abide the brunt of the storm. So there is a period in fever, as in other diseases, wherein the physician having done his best, must trust to the innate powers of the human frame for the resolution of the disease.† In this state of things, the further efforts of the practitioner, the “*nimia cura medici*,” as it has been well termed, can only be productive of harm; and there is no greater evidence, as it has been judiciously observed, of professional skill, than to know when to be active and when the contrary, at the precise period: a knowledge, which is certainly very different from sluggish and ignorant indifference, or indiscriminating and mischievous interference.‡ Some

\* On purgative medicines, p. 36.

† A physician should never despair or neglect his patient. It was a trait worthy of general imitation, in the character of Greding, that he never gave up a case, for he was well aware, that even the acutest minds are sometimes as much deceived as to the signs of recovery, as they are respecting those of death itself. Greding, *Sämmtliche med. Schriften*; *Leben*, p. 17.

‡ Sed, quod dolendum omnino est, aegrorum quamplurimi, haud satis gnari, quod perinde sit medici periti, quandoque nihil agere, atque alio tempore efficacissima adhibere remedia probitate atque fidei fructum hunc capere nolunt, sed vel negligentiae vel ignorantiae id imputant; cum empiricorum insalsissimus quilibet medicamenta medicamentis adjicere aequè novit, ac solet magis, quam medicorum prudentissimus. Sydenhami, *Opera universa*, § 5, cap. VI.

So Hoffmann—“Quum itaque natura tam providus et sapiens multorum affectuum sit medicus, et sæpe sola sine alia externa ope feliciter illos tollat; merito



fevers only require the active intervention of the practitioner at the beginning and close, either to repress excitement, and combat the various incident morbid complications, or to raise up and support the flagging strength of the sinking patient; some again, demand little or no remedial assistance from beginning to end; and there are fevers in which an active medication in some form or other, is required throughout. Even the ablest physician will find ample scope in such varieties, for the exercise of all the powers of observation and decision which he may possess. Persons ignorant of the science of medicine however, among whom assuredly, may be included the majority of patients and their friends, are in general not aware of these distinctions, and it is sometimes necessary, in order to hinder the patient's spirits from sinking, and lead him to suppose that nothing is doing for him, to prescribe some innocuous preparation. The infusion of roses with a small proportion of the sulphate of magnesia, or soda, is ordinarily made use of, and answers very well for this mental medication. When we meet with people who are enlightened enough to know, that to watch a disease is quite as important a duty of the practitioner, as that of merely ordering physic, we may omit the preceding formula.

There are many cases in which we may act on the mind, and so obtain advantages which it would be imprudent to neglect. A patient for example, cannot sleep, or fancies he cannot, and craves something to make him do so; in such a case, a small pill of the extract of gentian, or some equally potent narcotic, given at bed-time, will sometimes procure a refreshing slumber, when it might be improper to give a dose of opium. It is in this way, when the mind is capable of exerting an influence over the disease, that the infinitesimally minute doses of that magnificent pretender, Hahnemann operate.\* Direct appeals to the mind and feelings are

*talismodi in casibus medicum oportet esse plus spectatorem quam auctorem.*"  
*Opuscula med. pract.* p. 26.

\* I have now lying before me a *Bibliotheca Homoeopathica*, Leipzig, 1833, in which the titles of 248 works on the subject are given. These however, are but a small portion of those extant, as every season brings out a fresh swarm. There are also journals, pro and con. The doctrines of this second Paracelsus appear from various indications, to be taking root in the British islands. I cordially agree with

sometimes very necessary. Some patients will actually die of despair unless we are able to raise their spirits, whether they be depressed by the disease, or from other causes. It is hence obvious, that a physician who obtains the confidence of his patients, and whose kind and gentle manners re-assure hope, may do much to prevent the always unpleasant, and sometimes disastrous consequences, which result from excessive despondency. As a general rule, the rich are more timid during the incursions of sickness than the poor; the ties which unite the former to the world, are numerous and enticing, while disease is but a modification of the various hardships which almost daily beset the latter.

The personal attentions which patients require in fever are numerous; of these, one of the most essential is scrupulous cleanliness, both as to the person of the patient, his linen, the necessary utensils, and the apartment which he occupies. The linen of a person in fever should be renewed almost every day, or if that cannot be done, a double quantity of body linen and sheets should be provided, which may be changed every evening, until clean things would be necessary; the articles not in use might be aired between times. The body of the patient should be sponged with tepid water and soap, and wiped perfectly dry with a soft linen cloth, whenever improper moisture or other soil requires it. When any prostration exists, he ought not to be permitted to leave his bed whilst performing the necessary evacuations, and the night-pan ought to be covered in part with soft linen, and contain a little water, which in cold weather should be warm; the latter precaution is to be observed also, when he is able to rise. A delft pan should not be employed with a heavy person, when metal ones can be procured, as they may be broken, and thence lead to much discomfort and even injury. When a patient is not

the observations of an original writer in the 36th No. of the third annual series of that excellent periodical, the *Medicinische Zeitung*. “Die Homöopathie, parasitisch sich festsaugend an den negativen, krankhaften Trieben der Medicin, unfähig, sich die edlen Säfte der gesunden aneignen zu können, sucht nicht diese Mängel dadurch zu neutralisiren und zu heben, dass sie aus dem guten Gehalt das bessere hervor-treibt; sondern ihr allgemein—substanzieller Inhalt, ihre Zeitgemässe Bedeutung ist: die Zerstörung, Vernichtung, Auflösung des Bestehenden, Vorhandenen überhaupt, ohne das Gute anzuerkennen, geschweige das Bessere zu geben,” etc. etc.



able to free the bed, as the nurses say, folded linen with oiled silk underneath, must be kept under him. When pressure threatens to produce sloughing, we should endeavour to anticipate this change, as Elliotson judiciously urges, by careful watching, and by causing the patient to change his position, as well as in taking off the local pressure, by the proper adaptation of small bran or other pillows.\* The patient's general strength must be supported so far as it is possible, for when we can keep this up, there will be little danger of such an unfortunate complication, if common attention be made use of. Drs. Kirby and Graves, advise us to wash the parts in a solution of the nitrate of silver, ten or fifteen grains to the ounce: I have no doubt that it would often prove highly useful.† Spirituous lotions and sticking plasters are also recommended when the skin grows red, but they are too often of little use; prevention is infinitely better. When sloughing does take place, we must poultice.‡ In these cases, and in every protracted illness, a second bed proves of admirable utility, as I have often had occasion to experience. Perhaps the hydrostatic bed might prove useful.§ Sloughing is sometimes a most unhappy complication; unless the patient's strength

\* This excellent practitioner is of opinion that sloughing may always be prevented; but with the utmost respect for his great practical talents, and a full conviction, from personal experience, of the general efficacy of the measures which he recommends, I have been so unfortunate as to meet with cases, in which no means that I could devise or carry into effect, were adequate to prevent this always unpleasant, and sometimes fatal occurrence; and which, the violence of the disease, and the condition of the subject, warrant me, I conceive, in stating, that nothing could have warded off. See Elliotson's Lectures on Fever, *Lancet*, vol. XVII. I think that what I have here stated, receives additional corroboration from the observations of a very able lecturer; who, after mentioning change of posture, cleanliness, and camphorated lotions, proceeds to add—"All these rules are good, but in spite of them, after fever has continued some time, and the patient has become debilitated, bed-sores will come on, not only in consequence of pressure, but from the tendency in the constitution to form those sores." He then adds that he has seen them on the heel, and on the sole of the foot. Vid. Grave's Clinical Lectures, *Lond. Med. and Surg. Journal*, vol. III. Lect. 12.

† See the 2nd edition of Higginbottom's excellent work on the applications of the nitrate of silver caustic.

‡ For some judicious observations on the treatment of such cases, vid. Bright's Medical Reports, vol. I. p. 185.

§ See the 5th edition of Arnott's elements of physics.

however, is very low, though it may retard his convalescence, he will in general recover from it ; but I have seen cases in which this circumstance alone, by the irritation, exhaustion, and distress that it occasioned, has caused a fatal termination, which without it, would certainly not have taken place. I witnessed an instance in which a person was confined to bed for three months, before the loss of substance was renewed, which had been occasioned by a large slough on the sacrum. Attention is very necessary to prevent the sick from remaining habitually in the same position, and in so far as this cause operates, from running the risk of incurring this dangerous and disgusting complication. The treatment will be determined by the constitutional indications, and therefore falls under other general heads.

The admission of a due supply of fresh air, is a matter of extreme importance in many ways, during the course of fever.\* Air properly renewed, so essential in health, is even more so during disease. In the advanced stages of the complaint, it is a beneficial stimulus of the first order ; and the habitual respiration of the portion in immediate contact with the patient, impregnated as it is, with the various exhalations of disease, besides

\* Lind insists very much on this point, and with great propriety recommends a removal of persons who may be attacked with fever, whenever they are exposed to the influence of foul air. He proceeds to state, that many thousand patients were brought to Haslar Hospital, either from their ships at Spithead, or the marine infirmary at Portsmouth, not only without injury, but with great benefit. *Essay on the diseases incident to Europeans in hot climates*, p. 126. Some practitioners have found advantages so great from the gestation of patients in the open air, as to recommend it in strong terms. Jackson mentions its good effects in his own case, during two severe attacks of fever in America ; also, in the persons of a considerable number of sick soldiers of the 71st regiment, whom necessity compelled the removal of, in boats and waggons, during a retreat from the Cheraws, on the river Pedie. The same thing happened with similar results in the case of the Buffs, with which he served, in the retreat from Holland, in 1794—5. A man in this regiment, while stationed at Lymington, was so ill of fever, that “he appeared to be approaching fast to his end ; the pulse was thready, skin damp and cold, sallow and dirty countenance, inarticulate voice, and involuntary discharge of urine and feces.” In this state he was wheeled in a barrow for an hour through the open air, in the month of February, whereupon a beneficial change immediately took place, ending in a speedy and perfect recovery. *Exposition of the practice of cold affusion in fever*, p. 398, et seq. These interesting details afford much scope for reflection.—No writer perhaps, insists more on the advantages derivable from pure cold air, which he justly calls an aura salutifera, than Lettsom : see his *Medical memoirs*, p. p. 18, 25, 102.



being highly prejudicial to the patient himself, proves a source of danger and discomfort to those who come about him.\* It may be safely affirmed, that much of the prevalence as well as fatality of fever, are owing to the neglect of proper ventilation in the houses of the poor: fresh air, one of the cheapest, as well as best of purifiers, is not sufficiently cared for; assuredly, the greatest attention should be paid, both in hospitals and private houses, to secure a proper supply of it. It was often observed in the Irish epidemics, that people whose only covering was a temporary shed in the fields, or along the roadsides, recovered in a larger proportion, than those who occupied their ordinary ill-ventilated dwellings. A due regulation of the temperature of the patient's body, and in some degree, of the air he breathes, should be closely attended to. In the early stages of fever, a subduction of heat is commonly required; in the advanced ones, at least in cold weather, the warmth must sometimes be maintained by additional artificial means. Patients in the high excitement and early stages of fever, will bear the ordinary temperature of the air, even in winter, with impunity and advantage; we also find it expedient to use cold sponging, and lessen the amount of their bed-clothes.

Cold affusion is less frequently employed than formerly, except in washing patients, particularly children, in the onset of fever, and especially during warm weather. I do not think that the advantages which it procures, generally speaking, will compensate for the occasional risk and inconvenience which

\* An able modern writer seems to suppose that the fresh air at an advanced Period of the disease, for the first time, occasionally tends to injure, rather than benefit the patient. The general impression of the profession however, runs, I think, in favour of pure fresh air in all stages of the complaint. There may however, be cases in which the sudden stimulus of fresh air on a patient, who emerges from the stench and gloom of a close narrow apartment, may perhaps, prove too much. The same writer is of opinion, that fever patients can seldom be removed with advantage after the eighth day. Mischiefs certainly, must sometimes occur by tilting a patient in the advanced stages, and extreme prostration of the disease, for perhaps, a mile or more, in a sedan-chair, or other conveyance, to an hospital. Vid. Alison on the epidemic fever prevailing in Edinburgh, Ed. Med. and Surg. Journal, vol. XXVIII. p. 250. It is worthy of reminiscence, whether we ascribe the result to the stimulus of the fresh air, or the effects of the mere motion, that patients in scurvy have frequently died while they were being taken ashore in boats.

attend it; and it is now generally admitted, that it seldom cuts the fever short. There are cases however, in which it is more especially indicated than in others, and in which I think it tends to lessen the burning heat of the surface. The cold dash has been employed with success to suppress the raging delirium which sometimes impels patients to rise from their beds and wander about, seeking, as it were, the impression of cold.\* We know that there are several recorded instances, as I have mentioned elsewhere, of such persons getting away from those who had the care of them; and who, after considerable exposure to the fresh air, or after plunging into water, have become quickly well. I am of opinion that a tepid bath, particularly in private practice, where the attendants are proportionably more numerous, would often procure a diminution of the urgent heat, and induce repose. At all events, much relief will be ensured by copiously sponging the face, temples, neck, chest, arms, hands, and even the feet and legs, with luke-warm water. The temperature of the water, which may be slightly acidulated with vinegar, and the frequency of the process, should be accommodated to the feelings of the patient. Sometimes, even without any particular affection of the head, it will prove highly refreshing to shave and sponge the scalp also, especially in men.

In the early stages of fever, patients are better without any food at all; if they desire something however, they may receive a little very thin gruel at intervals. Individuals however, will sometimes become importunate for food and wine, when it would be highly improper to allow either. For drink, the patient may receive water flavoured with lemon or orange juice, or one of the mineral acids; sometimes, they prefer tea, toast-water, whey, or cream of tartar water, and sometimes water alone; in these particulars, when there is no special counter-indication, they may be permitted to please themselves. No patient should be allowed to exert himself unduly; sometimes the mere act of sitting

\* Tuomy, *Op. cit.* p. 150. Marsh, in the Dublin hospital reports, vol. IV. p. 514, states, that he has occasionally found the shower-bath very efficacious in repressing the delirium of fever. I recollect an instance in which, by this means, a very considerable degree of delirium was quickly and safely abated.



up is prejudicial, much less rising and walking about; nevertheless, if a patient a little delirious, and whose strength is sufficient, earnestly desire to get up, he may often be allowed to do so—the impression of the cold air will generally lead him to return to his couch. Some subjects incline to talk a great deal more than what is proper; and sometimes, people are so thoughtless, as to engage the sick in conversation unnecessarily. The transacting of affairs, must if possible, be carefully avoided. All painful moral impressions should be warded off—they have sometimes caused the death of patients. Noise should be suppressed, and the apartment kept particularly quiet. The glaring day-light should be excluded, but it is not necessary to keep the room dark. Persons labouring under fever, should not be needlessly irritated, or contradicted. The patient's mouth and lips ought to be gently cleansed from the sordes which are apt to accumulate about them; a bit of orange will contribute to this, and sometimes a slice of lemon dipped in sugar. There are different succulent fruits which may be given without injury. It is very necessary for the attendant physician to look carefully after the conduct of the nurses, and see that they attend properly to his directions: some of them are intelligent, decent persons, and others are very much the reverse. The demeanour of friends and relatives, is not always what it should be. Some of them will give food which should not be given, and even hinder the exhibition of medicines; pretenders to medical knowledge, occasionally make themselves very troublesome, and call for much forbearance and good temper on the part of the professional attendant. It is sometimes very difficult to get fires put out, curtains taken down, ventilation and quiet secured, and to hinder the patient from being overloaded with bed-clothes. The physician must attend to every thing, if he wishes his patient to prosper.\*

Most of the functional and other complications incident to fever, have now been gone over, and with a few previous ob-

\* In regimine commendata usuro aeris sereni, limpidi, puri, temperate calidi, hypocausta enim nimis calefacta, vel excessivus calor a stragulis, semper fere, vires exhauriendo et excretorios actus turbendo, nocuerunt. Hoffmann, Rat. Med. Tom. IV. de feb. exanthemat. p. 246.

servations, I shall proceed to the treatment of the advanced stages. The variety exhibited by fever is very great; hardly any epidemy occurs, whether at home or abroad, that is not marked by peculiar features; sometimes these are accidental, and sometimes they arise from local circumstances and other causes, of which the operation is frequently ill understood. The safest and best way of conducting our treatment, is to view the various symptoms which arise, as often as we possibly can, under the head of general indications, though perhaps, in some cases, requiring a special medication. This will be best accomplished by ascertaining the sources of these different symptoms. Directions, for example, are sometimes given how to treat delirium; but this abnormal condition of the mind, may be occasioned in one case, by determination of blood to the brain—in another, by an inflammatory affection of this viscus and its membranes—and in a third, by the reflected irritation arising from some organic or functional morbid process, going on in some other organ; it may also exist during extreme prostration, from causes very different from those just mentioned. I may make the same remarks with regard to the mode of treatment laid down for pain in the head or abdomen, for diarrhœa, and so forth. In all such cases, before prescribing, we should look well to the functional and organic condition of the different organs, and to the aggregate action of the whole, which will always more or less reflect the state of the individual parts, that go to compose the complex and wonderful machinery of our corporeal being.\* To administer medicine therefore, for a particular morbid phenomenon, without looking to the state of the whole frame and its constituent portions, is to run the risk of committing grievous errors. Now, excessive sweating, to give another example of what I have been speaking of, is also a particular condition for which we are sometimes told to give diluted sulphuric acid, and the like. In some cases, this will be very proper, but I have seen this condition of the cutaneous ex-

\* This, I conceive, is what is expressed by a phrase frequently made use of by Pring, (see his pathology) namely, “related disease,” and by Percival when he tells us not to overlook the associate actions of disease. Vid. Transactions of the College of Physicians in Ireland, vol. I. p. 359.



cretories, caused merely by too many bed-clothes; I have seen it combined with high excitement, and even inflammation—and very often conjoined with extreme debility. In one case, it is witnessed in combination with a warm skin—in another, with a deadly cold one; sometimes it accompanies a critical change—and at others, it will attend a fever during its whole course; hence its treatment is generally included in a higher indication.

The state of the patient's bladder, as I have more than once mentioned, must be carefully attended to in fever; the medical attendant should always satisfy himself as to the regularity of the urinary discharge, or the contrary. When this excretion is retained, merely from over-distention and inability to void it, a catheter must be passed from time to time. Sometimes the bladder remains full, and a small quantity is occasionally expelled, by which the attendant may be deceived, if he do not pass his hand carefully over the pubis. On some occasions, the fluid trickles away without collecting in the bladder; sometimes the quantity secreted is less than usual, and at others, the secretion ceases altogether; in which last case, we must look to the condition of the brain, the state of the patient at such times, being one of great and imminent danger.\*

The employment of saline mixtures, of diuretics and diaphoretics in fever, was at one time extremely general. So far as my own experience enables me to speak, I do not think that this line of medication is often productive of much good.† The quantity of warm drink and clothing necessary to make diaphoretics operate, puts their employment as a general rule, almost, if not entirely, out of the question in fever—since coolness, both as to drink and clothing, is an indispensable essential

\* See an interesting paper on *Ischuria renalis*, in the *Edinburgh Medical and Surgical Journal*, vol. XVII. p. 210, by Dr. Abercrombie.

† Bright prefers *ipécacuanha* to antimony, as a diaphoretic, being of opinion that antimonials are hurtful, *Med. Reports*, vol. I. p. 185. Others however, maintain the efficacy of antimonials. I have given them more than once a fair trial, without finding that they exercised much influence on the complexion or the duration of the complaint, always excepting those cases in which I made use of them in aid of other means, for diminishing general excitement. In other respects, it would not be easy to persuade many old practitioners of the inefficacy, much less the injurious tendency of that noted antimonial, James' powder.

in the treatment of the early periods; during the latter stages, diaphoretics must be altogether proscribed. I doubt not that fever may sometimes be resolved by the heating and sweating treatment, as well as by the opposite mode, now so universally pursued, and I have even known instances; but unless in the very early stages, and where there is neither high excitement nor inflammatory complication, the thing is not to be thought of. But how seldom does a physician see a patient at the very onset of fever. I think, but I say it with great reserve, that it might occasionally be justifiable, when the preceding conditions meet, and after an emetic has produced a slight moisture on the skin, to keep the patient wrapped up, and try to produce the resolution of the fever this way; if the attempt did not succeed however, it should be immediately desisted from.\* It is more than probable that the old mode of treatment, though now, with much propriety, so generally and for ever abandoned, could not have been always unsuccessful, else it seems evident that it must have been given up sooner. The wondrous powers of nature were doubtless often taxed to the utmost, to save the patient at once from the treatment and the disease. The great error however, of those who practised it, was in adopting it in every case without discrimination, and in continuing it during the whole course of the disease. We should not forget that profuse and early sweats which are not critical, may be productive, as Tuomy observes, of dangerous weakness: how often indeed, do such take place during the disease and throughout it, as I have before observed, without producing any resolution.† How many unfortunate persons must have been destroyed this way, by loading the unhappy patients with warm clothes, stuffing them with hot drinks, and heating their apartments with huge fires!‡ It

\* Cullen gives us a number of excellent observations on this subject, which I think are worthy of being consulted. Works by Thomson, vol. I. p. 621 and 654. He lays down with much precision, the circumstances under which we may attempt the resolution of fever by sweating, the rules by which we are to conduct it, and the exceptions to the practice, concluding with excellent general remarks. Consult also, Wilson Phillips, (otherwise Phillips Wilson) on fever, vol. I. p. 578. Likewise, Sydenhami opera, § 1, cap. IV.

† On the diseases of Dublin, p. 127.

‡ Lettsom gives an extract from an old English work of the 16th century, translated from the Dutch, and entitled, "The Boock of Physicke, by Dr. Gabelhouere,"



is a grand matter however, when it can be done with perfect safety, to be able to effect the early resolution of so dangerous a disease as fever; and the judicious and intelligent physician, while he shuns the barbarous, because indiscriminating and frequently fatal practice of our ancestors, should also keep his eyes open to the occasional advantages which probably attended it, and without which, none but lunatics, much less men, in many respects shrewd and experienced, could have habitually continued it.

Mercury, independent of its purgative action, has been used and frequently recommended, both as a prophylactic and therapeutic agent in fever. Many able physicians have given it as their opinion, that when it could be given, so as to affect the mouth, the fever would cease. Here however, we labour under the ambiguity, as to whether the mercury acted because the fever ceased, or in spite of the fever, and so caused its resolution. The sum of the evidence on this subject, seems to me to prove, that sometimes the one occurrence took place, and sometimes the other; that some persons are capable of having their mouths affected by mercury in fever, which thereupon disappears—and that others, either from the stronger hold of the disease, or some inexplicable peculiarity of constitution, are insusceptible of the mercurial influence until the fever ceases. Yet patients will occasionally die of fever, notwithstanding the production of ptyalism; this however, appears to be an exception to the general rule. From all however, that I have been able to learn on the subject from others, as well as from my own experience, I have come to the conclusion, that the administration of mercury as a sialagogue in fever, and with a view to cut short the complaint, though sometimes successful, is on the whole an uncertain remedy, and inferior in point of efficacy to other modes of medication. Of course, I do not include in this remark, the exhibition of mercury with opium in fever, complicated with inflammation, after blood-letting has been carried as far as it is practicable, nor when it is given in small doses as an alterative. I have myself, upon the recommendation of those who had used

in which this incendiary practice is fully detailed. Vid. Lettsom's medical memoirs, Lond. 1774, p. 22.

it, given mercury in several instances during simple fever, to an extent sufficient to have produced salivation in a person in health; this result however, never occurred, either during the complaint, or after it had ceased—nor did it produce any influence on its duration, or otherwise. I have never tried it in a very bad or fatal case; and it will be obvious from the preceding, that I do not feel inclined on the whole, to recommend mercury in the form of a sialagogue as a general remedy, in ordinary cases of fever.\*

I come now to the last point on the subject of treatment, and that is, as to the procedure which we are to adopt in that important stage of fever, which is rightly enough termed the

\* The able editors, Drs. Barker and Cheyne, of the "Account of the Fever Epidemic in Ireland," vol. I. p. 442, observe—"That in many cases the mercurial practice was adopted, that is, so as to effect the system." It was pretty generally allowed, they observed, that when the gums were affected, the fever immediately, or soon after ceased; but it is not clear that this effect was generally obtained in severe cases. Dr. Barry of Cork, whom they quote in the same page, mentions the cases of a physician and of another individual, who both died, notwithstanding the production of severe ptyalism. Dr. W. Ryan, then of Armagh, (now of Rosstrevor,) one of the gentlemen who employed calomel as a sialagogue, and whose practice was very extensive, speaks thus—"The remedy which, in severe cases, I have found next in efficacy to blood-letting, was calomel. I prescribed it in such quantities as not only to secure its purgative effect, but also its mercurial action on the system; and as soon as this took place, and the mouth grew sore, I have never been disappointed in my expectations of recovery. My attention was first directed to this medicine, as it were, by mere accident, having exhibited it in the case of a lady at the first appearance of the epidemic, merely to open the bowels; but from peculiarity of constitution, the calomel affected the mouth so completely, that salivation was the result; and the second day after, I was agreeably surprized to find that the fever had disappeared." *Op. citat.* p. 351. Pring gives two striking cases of recovery from typhus, supervening upon salivation. *Exposition of the principles of pathology*, p. 100, *et seq.*

A London practitioner of high and well-merited repute, sometimes gives mercury with great advantage, so as to affect the mouth gently. See Elliotson's lectures as reported in the *Lancet*, vol. XVII. It is certain that the mercurial action does not act as a prophylactic against fever, as we have had considerable evidence of late, for believing that the extract of belladonna does against scarlatina; if it were the case however, the one fact would not be a whit more wonderful than the other. Dr. Graves makes the following remark, in the sixth of his very able course of clinical lectures—"I have seen a person labouring under mercurial irritation, seized with common fever, which afterwards became typhus, and proved fatal in five days." A recent writer speaks of mercury with much approbation, especially during the period of prostration; he prefers external frictions, half a drachm of the Unguent. hydrarg. fort. twice a day. *Vid.* Burne's *Treatise on Adynamic Fever*.



period of prostration, but which varies in intensity from a comparatively slight amount of indisposition, to the last degree of debility, that is compatible with the continuance of our existence. The pathological condition of a person in this situation is sufficiently difficult of analysis. There is prostration of both body and mind; the organic and voluntary functions are more or less paralyzed; various organic lesions or their consequences, subsist; and there is a considerable, though varying depravation of all the tissues and fluids which go to make up our frame. I need not enter into the pathology of this condition, which has been previously attended to, but shall merely remark, that that pathology, and the analysis of its general and individual conditions, known by the term diagnosis, must form the only sure foundation upon which a rational superstructure of practice can be erected. The treatment of the different inflammatory lesions which may complicate this period, having been disposed of, I have only to enumerate the various agents which we have it in our power to employ, to effect a beneficial modification through the medium of the mind on the body of the patient. Those who are aware of the influence of the mind on the body, not only in health, but in disease, and all should be so, will not consider it superfluous, to devote a few remarks to the advantages which we may derive from attention to this point.\* The means which lie in our power to stay the progress of disease, or avert its fatal termination, are unhappily often too few, and no conscientious or intelligent practitioner will neglect any, that can by possibility contribute to prolong the existence or augment the well-being of his patient.

The exhibition of stimuli at the close of fever, demands a few general considerations, before I proceed to detail the

\* A number of persons, some of them of considerable note, medical men as well as others, but whose names it is unnecessary to mention here, have written treatises on the power of the mind on the body, both in health and disease. The subject, apart from the fanciful speculations which it has led to, is very curious, and, as a question of science, of high importance. Psychological medicine, *medicina psychica*, is thus defined by Puchelt—"Die psychische Medicin handelt von den Störungen des psychischen Lebens und von der Kunst, auf die Seele des Menschen zum der Heilung zunächst einzuwirken." *Umriss der allgemeinen Gesundheits—krankheits und Heilungslehre*, Erster Band, § 35.

mode of giving them.\* As I have often remarked before, the action of any stimulus implies a receptivity on the part of the system to its influence. The stimulus moreover, must be precisely adjusted to the wants of the system; it should not err if possible, either in excess or insufficiency. If we give too much, the excessive action which it leads too, will eventually occasion a corresponding degree of weakness: if we administer too little, the good which we design by it, is not produced—in either case, the patient may suffer grievously, or even lose his life. It will too often however, unfortunately happen, that the system is unconscious of all the means which we employ, or is only feebly excited, and death, in conformity with the inevitable laws of our being, steps in a victor. It is most important, that stimuli be not employed unnecessarily, or too early in fever: in the former case perhaps, we may occasion the destruction of the patient—and in the latter, by prematurely encroaching on our resources, we are deprived of all means of rousing him when he has most need of our assistance.† The stimulus, for this reason, should not be given an

\* I cannot in this place pass over a remark of Billing, which seems to me to merit some attention—"The strongest mode of illustrating the risk of stimulating a typhoid patient, is to suppose, that when an important organ, such as the lungs or brain, is inflamed, the typhoid state of collapse may be just one of the provisions of nature to allow the parts to recover, as they would during the collapse of syncope produced by bleeding; and of course, when so important an organ as the brain itself is diseased, we should be careful how we set the heart pumping more forcibly than necessary."—He qualifies this however, immediately after, by saying—"Only let us not go into the opposite extreme, and so let the patient die for want of a spoonful, or even a pint of wine or brandy." *First principles of medicine*, p. 87.

Hildenbrand and very many others, dwell largely on the disadvantages of too early stimulation, by which an unfavourable complexion, that it would not otherwise have exhibited, is imparted to the disease. Pringle has seen delirium produced by the untimely use of wine; many other practitioners might yield the same testimony. See also Sydenhami, op. § I, cap. IV.

There are some judicious observations on the ill consequences arising from the early and indiscriminate exhibition of wine in fever, in Black's clinical and pathological reports, Newry, 1819. Surely, (observes the author,) if the physician should observe, in a case of fever, such symptoms as would indicate a state of the sensorium at all analagous to what these dissections discover, (the state alluded to, was that of high vascular action and excitement,) he would not think of prescribing wine or alcohol, p. 150.

† Pring has seen fatal apoplexy produced in typhus, by the improper employment of stimuli. *Op. cit.* p. 104.



hour too soon, for if the natural powers do not come in time to our assistance, the artificial ones will prove totally inoperative, to bear the patient through the prostration of the disease. As I have said above, a certain appropriate susceptibility must exist, without which, all the brandy, and opium, and wine, that we are able to pour into the stomach, will act no more upon it, unless mechanically, than they would on a leathern bag.\* On the other hand, we must be careful not to delay giving the stimulus too long, as we run the risk of losing our patient from irrecoverable exhaustion—and many have perished from the weakness and prostration incident to the latter stages of fever, from the want of a little of that artificial support, which fainting nature only requires to enable it to battle successfully against the agents of death. A happy medium is rarely perhaps attained; it is sometimes difficult to hit upon the precise point with correctness, owing to our partial ignorance of those minute details, an acquaintance with which only, could enable us to arrive at a just decision. If this occur with persons who judge for themselves according to the circumstances of the case, what must be the result with those who look upon fever altogether as a process of inflammation, and those others, who consider it a mere form of debility. We must ever keep in mind, that the human frame, both in health and disease, contains within itself a certain number and amount of impelling powers, which however, cannot long subsist and act, without receiving a fresh supply from time to time, of those outward influences which the

\* Das Verhältniss der Organismen zu den Reizen ist also kein bloss passives, sondern ein actives. Tiedemann, *Physiologie des Menschen*, Erster Band, § 530, p. 660. This is not true of stimuli alone, but of every medicinal agent that we employ. Andral observes, (*Anat. pathol.* Tome II. Classe 4 ième, § 3,) that there may be such a torpor in the intestinal canal, from the state of the brain, as to prevent the action of purgatives and emetics. And it is well known, that the surface of the body is sometimes in such a state, that blisters or irritants of any kind, mechanical or chemical agents excepted, will not act on the skin. See a very important and interesting work, Sabatier (d'Orleans,) *Lois de la revulsion, étudiées sous le rapport physiologique et thérapeutique*, p. 296, et seq. Those who have been conversant with the Indian cholera will bear me out in saying how frequently, how universally indeed, in the latter stages of that formidable complaint, the stomach is insensible to every stimulus, and the skin to every form of irritation.

Author of our being has rendered essential to the continuance of our existence. These internal powers however, are sometimes sadly overlooked, and stimuli are exhibited with needless profusion, when the powers in question, would prove amply sufficient to ensure a return to health. The administration of stimuli and food, and the regulation of the temperature, will, with the exception of a few special indications, occupy the remainder of what I have to say on this head.

When a patient is merged in the stupor or muttering delirium of typhus, it frequently proves advantageous to rouse him up if possible, as Naumann recommends, by occasionally addressing him during the day, with a few earnest observations; and by at least a momentary dispersion of the chaotic and fugitive imagery which assails him, recall him to a glimpse of a brighter earthly existence.\* An affecting instance is mentioned by a medical writer, wherein, by a well-timed appeal of this kind, he was able to awaken a female patient from the stupor of fever, and so eventually, to secure her perfect recovery; Treviranus likewise, furnishes us with another of equal interest.† There are however, many examples on record, wherein, by a judicious, yet cautious reference to cheerful and strongly-riveted associations, the physician has been able to rescue his patient from imminent danger; and certainly, the careful employment of these means, as I have ever found, is productive of the greatest benefit in the languor and depression of disease.

Of all the physical stimuli which we possess, alcoholic drinks and opium are undoubtedly the best; camphor, phosphorus, yeast, arnica, ammonia, and bark, possess their occasional advantages; but I conceive that they are relatively

\* “Gewiss ist es rathsam, zur Zeit der vorherrschenden Typhomanie mehrmal täglich durch ernstes, festes Anreden, die Kranken aus ihrem Taumel zu erwecken, sie an sich selbst zu erinnern, und durch ein augenblickliches Verjagen der chaotisch in einander fliessenden Traumgestalten wenigstens einen lichten Blick auf das heitere Erdendaseyn möglich zu machen.” Naumann, Handbuch d. Med. Klinik, Berlin, 1829, Dritter Band, Erste Abtheilung, p. 252.

† Marcus Herz, der bekannte Arzt und Schriftsteller, wurde in dem Augenblick von einem nach einer schweren Krankheit zurückgebliebenen Delirium befreiet, als man ihn in sein Studirzimmer brachte. Biologie, Sechster Band, p. 23.



of far inferior efficacy.\* Who would employ them, when he could have recourse to the former? When wine and opium fail, I fear that we have comparatively few resources left. We must not indeed, despise the various energies which are so bountifully supplied by the hand of nature, but I conceive that we should employ the best. Of all the alcoholic stimuli, wine is undoubtedly superior to any.† If we employ a weak wine, as claret and the like, the patient will require the more; if a strong one, as sherry, port, or madeira, it is proper to dilute it with water, especially at first; in some cases, if economy be an object, porter or punch, forms a very good substitute for wine. Whatever wine we employ, it should always be good of its kind. The supply of wine is relative to the period of the disease, the degree of prostration, as well as the sex and age of the patient. The previous habits and rank of life must be attended to; a drunkard will commonly need more wine than a sober person—and one who has lived well, and used little exertion, than a man of industrious and temperate habits. A person of good constitution commonly requires but little stimulus—children rarely demand it; but I have seen such brought into the hospital in the third week of typhus, cold, prostrate, with suffused eyes and features, foul sordid tongue and lips, to whom wine was imperiously necessary to ensure recovery: such cases however, are not common. The longer fever continues, the more intense in most cases, is the after prostration, and the greater the necessity for wine—and the more intense the prostration, and the more deeply the fever has worn the typhoid stamp, the greater also, is the necessity for wine. All these cases are liable to occa-

\* Philip hints that galvanism might prove useful as a stimulus in fever, where there is deficient nervous energy without inflammation. He considers the best means of transmitting it, to be through the stomach and lungs. I am unable to offer an opinion as to its possible efficacy. I should hardly however, be inclined to try it, except as a “*pis aller*.” See Philip’s experimental inquiry into the laws of the vital functions, p. 338.

† Barbier asserts that he has frequently found much advantage during the prostration attendant on ataxic, adynamic, and typhoid fevers, from the alternate application to the epigastrium and abdomen, of a woollen rag dipped in some aromatic cordial tincture, such as that of rosemary or cinnamon. It is perhaps reasonable to suppose that this remedy, which is at least harmless, might sometimes prove useful. Barbier, *Mat. med.* seconde éd. Tome II. p. 384.

sional exceptions, but they need not be repeated here. Wine is more frequently necessary than some suppose, and more rarely than is imagined by others. During the prevalence of epidemic fever, it is generally oftener required than at other times; but without any epidemic prevalence, much more typhus, as I have more than once had occasion to observe, will exist during some years than others—and at such times, a greater consumption of wine will be necessary. I never give wine by routine or indiscriminately, but invariably endeavour to regulate its exhibition by the principles already laid down. On the whole, I may observe, that I do not find it necessary to give wine very often, and I never administer it heedlessly or unadvisedly: it is always better to let the patient recover by his own natural powers, when they prove sufficient. It requires considerable practical tact and knowledge, to know when to exhibit wine with advantage, and when to omit it. I do not like to give it when the tongue is dry and brown, unless the prostration is very considerable, and even then, I administer it with reserve, immediately discontinuing it, if I find upon a fair trial, that the patient is not benefitted. Nevertheless, as O'Brian observes, there are desperate cases in which wine is our only remedy; and it is a wonderful proof of God's goodness, that he has furnished us with a means at once so efficient, and for which nothing could be substituted.\* If the pulse is soft and small, though quick—and the tongue moist, although not clean—and the patient labour under considerable debility, wine will generally do good. If the pulse becomes quicker and harder—if the breathing grow more hurried, and the patient restless—and more especially, if the tongue turn dry and hard, it is clear that the wine is counter-indicated. If on the whole however, the tongue grow cleaner and softer—if the pulse fill—if the extremities get warm—if the respiration becomes more gentle and natural—if the wandering and delirium disappear—if the patient relish his wine, and seems to improve upon it, we may fairly conclude that it is serviceable to him. The experienced practitioner however, will frequently learn at a glance, the extent to which it proves

\* Vid, Transact. of the Col. of Phys. in Ireland, vol. III. p. 504.



beneficial—and that, by numerous tokens, some of which it would not be easy to describe. The patient's allowance should be gradually diminished; it invariably does harm to discontinue it suddenly.\* The quantity given, must vary with circumstances, from a few ounces to a pint or more, making an allowance for the strength of the wine. It may be made into *negus*, mixed with water simply, or occasionally with a little *panado*; some patients however, require it undiluted, and in the event of great weakness, one may sometimes add a proportion of spirits with propriety. Punch may occasionally be alternated with advantage; patients will sometimes prefer it. The desire of the patient for wine is a very uncertain criterion of its necessity. Many will ask for it, under the vague impression that they require it, or from seeing others receive it. I have seen them implore that it might be given to them, in the acme of a burning fever. The patient's desires, however ill-founded, should never be wholly disregarded; if they cannot be satisfied however, with the simple assurance that wine is improper for them, they may receive a little water coloured with wine, which I have known to yield satisfaction. Sometimes however, I have seen patients anticipate the determination of the medical attendant, and solicit the exhibition of wine, when it was in every way indicated, and when it really proved in the sequel, of the utmost utility.† In truth, the physician should ever be on his guard, neither rashly deciding upon, nor indolently procrastinating the formation of just conclusions, on the phenomena presented by the hand of nature. Of all qualities, a judicious and temperate quickness of judgment, is necessary to the man who would practise with credit to himself, or advantage to others: while we deliberate, the phenomena of disease change their aspect, the period for decision has passed by; and even when we arrive at length, at an accurate conclusion, we only enjoy the impotent satisfaction, that the advantages which might have been drawn from it, have lost an opportunity for their exercise for ever.

\* Vid. Law's observations as to the restrictions with which wine should be given in fevers. Ed. Med. and Surg. Journ. vol. XXXIII. p. 82.

† *Sitis sæpe magna; alias nulla, nisi vini, quod plures anxie appetunt.* Frank, J. P. De curand. hom. morb. Lib. I. de feb. p. 105.

A man might as well expect the raging tempest to lull at his bidding, as hope that the course of disease should stay itself until he has time to form a determination respecting it: the course of nature is ever progressive, and will pause for none.

There is an advantage in the use of wine over other stimuli which I have to mention: it has not a medicinal flavour, and it must be admitted, every thing else alike, that this alone would be a ground of preference. It is quite astonishing, when we reflect on the quantities of wine which some persons are able to consume without intoxication, even when unaccustomed to the habitual use of it. Some have been known to go the length of a couple of bottles of port or madeira, and twice that quantity of claret. I have seldom found it necessary however, to administer even half this amount. It is remarkable that persons, after excessive hæmorrhage, are also able to bear large doses of wine and brandy with impunity: the case of women after severe flooding, affords an example well known to practitioners. It is also worth notice, that such persons are similarly circumstanced with respect to opiates.—Yeast is exhibited by those who recommend it, mixed with porter or ale; it may also be given as an enema.

Opium may be used in fever as a stimulus or otherwise. That it may prove occasionally useful as a stimulus, I do not doubt, but wine far surpasses it in general utility.\* I have tried it in some cases to a considerable extent, in place of wine, gradually increasing, and as gradually diminishing the quantity, giving occasional laxatives to operate on the bowels; but though it seemed to answer the purpose to a certain extent, I much prefer wine, and I believe this is the general sentiment on the subject.† I have mentioned its utility after inflammation; with or without calomel, and also in the diarrhœa, which may complicate the different stages of fever. It is

\* For some observations on this head, see Alison in Ed. Med. and Surg. Journ. vol. XXVII. p. 255.

† A remarkable work, written by a no less remarkable man, advocates the exhibition of calomel conjoined with opium, in repeated doses, as a general remedy in fever. It is needless to comment upon a form of practice which, so far as I am aware, no one follows, and which I only refer to as a thing that has been. Maclean's practical illustrations of the progress of medical improvement. Lond. 1818, p. 156, et seq.



sometimes very useful in subduing great restlessness, when the latter exists in the advanced periods of fever; but I prefer not giving it, unless the tongue is tolerably soft and clean, and the general excitement nearly or wholly abated. It may be combined or not with a proportion of the extract of hyosciamus. If a single dose of opium answer the purpose for which it has been given, it need not be repeated.—As for myself, I never think of giving the preparations of bark, or any of the vegetable bitters, except in the convalescence of fever; during the prostration of this disease, I conceive that we are provided with better stimuli. A different practice, we learn from various authorities, formerly prevailed; bark was frequently given in the acme of fever, perhaps during the co-existence of active inflammation: I can hardly conceive a more fatal practice.\*

Arnica is variously recommended both at home and abroad; it is however, particularly cried up by German practitioners; and Richter and Hecker, not to quote others, recommend it strongly in the typhoid stage of fever.† I may be permitted to say of it however, as of some other agents, that we possess means of superior efficacy. I need not describe the mode of exhibiting camphor and ammonia where they are thought necessary; I cannot say that I often employ either. Phosphorus I have never tried in fever; but there is some testimony on record, as to its utility, by Strohmayer.‡ There is

\* We must not conclude however, that this was always the case, as the following extract proves—"Pulcras hoc anno hujus morbi curas vidi. 30. annorum fæminæ, petechiis adeo scatenti, ut medici alii mecum testarentur repletioem iis se neminem vidisse, jamque maligne ab ipso principio decumbenti consueta methodo corticem dedimus, corticis usum a curato morbo dudum protraximus. Læti contemplantur postquam aliquot diebus eo remedio usa esset, vires increscentes, ægramque cum abundantissima efflorescentia vix ægrotantem, et firma valetudine brevi potitam. De Haen, Ratio medendi, Lug. Bat. 1762; De febribus malignis dictis, cap. XXIX. § 3.

† Richter, Ausführliche Arzneimittellehre, Band II. p. 144.

Hecker, Praktische Arzneimittellehre, Erster Theil, p. 688.

‡ In place of repeating the earliest recorded cases of the exhibition of phosphorus in bad fever, the reader will perhaps, be glad to learn, that it has been recently employed, with apparent success, by a practitioner of eminence in Germany. The case was one of extreme danger; the pulse was small and hardly perceptible; the extremities were cold, and the patient so far reduced, as not to present the probability of an hour's existence. After the third spoonful of the mixture had been given, she gradually recovered. Two grains of phosphorus were made up in a five ounce emul-

a great variety of other stimuli, more or less frequently employed, and chemistry and pharmacy are also making yearly additions; but as I conceive that we are always bound to employ the best, they will rarely be used except in desperate cases, or when we are destitute of a supply of medicine. Carbonic acid gas, in the form of effervescing draughts or fermented drinks, sometimes forms a gentle and pleasant stimulus, which may be occasionally exhibited, should the patient desire or other circumstances require it. We sometimes find it convenient to exhibit stimuli in the form of enemata, either in addition to those given by the mouth, or when the stomach rejects its contents.

I have occasionally found singular advantages, from the exhibition of a smart emetic in the latter stages of fever. Medical men are of course well aware, that the effects of an antimonial, are very different when given in an emetic or merely a nauseating dose.\* in the former case, it will prove an active and frequently a beneficial stimulus. Both results may be witnessed in the varying operation of sea-sickness in different individuals, giving fresh stamina to some, and inducing considerable debility in others. I believe it would enter into the minds of few however, to exhibit emetics generally, as a stimulus at the close of fever; but it is desirable I think, that they should possess this additional advantage, when we administer them for the purpose of clearing out the bronchial tubes, which sometimes become inconveniently loaded, especially in elderly persons, during the latter stages of this complaint. A French writer recommends that the patient, when he is able to bear it, should in these cases, be supported on his seat, with his head inclined forward upon his breast, by which means he will be the better able to free his chest.†

sion; a large spoonful to be taken every three quarters of an hour. All kinds of stimuli appear to have been exhibited, except wine, at least it is not mentioned by the author. Strohmayer, *Medicinisch, praktische, Darstellung*, p. 124.

\* The distinction has been well drawn, and I think, ingeniously accounted for, in "Holland's experimental inquiry into the laws of organic and animal life," p. 435.

† "L'expectoration chez un homme affaibli, quand il est couché sur le dos, est presque impossible, elle devient facile aussitôt que l'attitude est assise et que la tête est fortement fléchie sur la poitrine." Piorry, *Clin. Med.* p. 42. This recommendation, in which this author however, is not singular, is followed by the details



These things are worth attending to, for I believe that cases of asphyxia occasionally happen from the incapability of expectorating, when the powers of the patient are not otherwise so far exhausted as to occasion death.

When we think it necessary to open the bowels during the period of prostration, which as a general rule it is very proper to do, we must act with caution, since it will occasionally happen that an injudiciously active purgative, and even an enema, may produce a delirium which has proved mortal.\* When the prostration sets in early, we must be doubly careful. Neutral salts generally, do harm, more from the unnecessarily large doses in which they are sometimes exhibited, than owing to any peculiar ill qualities possessed by them. I have given them throughout the whole course of fever, gradually diminishing the quantity, so as to act very slightly on the bowels, not only with impunity, but with advantage; the warmer purgatives however, are generally preferred, and I think, with much propriety, in the advanced stages.

A blister, generally a small one, applied for a few hours to some point of the cutaneous surface, will sometimes act as a beneficial stimulus; blisters however, should be employed with

of two cases, in which the patients, to all appearance, were rescued by its employment from urgent danger. I think that the ingenuity and novelty of the means here pointed out, are worthy of attention; and from the way in which they depart from common routine, are calculated to rouse useful reflections. I have recommended emetics in the text, when the bronchial tubes were loaded. Many practitioners have given instances of their utility in such cases; and the writer from whom I have just quoted, mentions an example of their complete success, (p. 45, of his *Clinique*,) in rescuing a patient from imminent death, by asphyxia, the bronchia being excessively obstructed.

A very remarkable case is described by Gallé, in which a lady almost in articulo mortis from weakness, and the excessive accumulation of mucus in the bronchia, was enabled to expectorate—"une quantité d'énormes crachats," so as to fill a plate, (cuvette,) in two hours—during which period, he supported the patient while she coughed, with his left hand on the spine, and the other on the epigastrium, to which he held some folded linen. During every expiration and while she coughed, he exercised a smart pressure with the right hand. It seems probable, that this mechanical aid, may have had the effect which this writer ascribes to it. Gallé, *Observation Clinique*, Paris, 1829, p. 9.

‡ On a souvent vu, (says Barbier,) après l'emploi d'un purgatif, une fièvre qui se montrait bénigne revêtir tout-à-coup une forme ataxique—*Mat. Med.* seconde éd. Tome III. p. 191.

reserve.\* Of their utility as a form of counter-irritation, I have already spoken.†

It is of essential importance, that a patient in the prostration of fever, ought to be provided with a sufficient supply of fresh air; it should never be suffered to become stagnant, nor, if it be possible to hinder it, permitted to be perceptibly loaded with the emanations contingent on the disease.‡ Instances are very numerous in which the low delirium and prostration of fever, have disappeared when a person has been taken out of a small confined apartment, and brought into the well-ventilated ward of an hospital, or exposed to the open air.§ I have already mentioned the case of the Irish poor, who sometimes go through the whole disease, nearly in the open air; and various authors abound with examples of the rapid recovery of patients in typhus fever, after being removed out of a dirty crowded hospital during a retreat, and carted through the open air, even when exposed to rain and the vicissitudes of the atmosphere. Large open tents, in which the sick could

\* The most extravagant encomiums are passed by Morgan on blisters that I have any where met with. He advises their early application, especially in nervous fevers, and actually recommends that they should be kept on for four or five days, or longer, if they will draw any thing. See Morgan's mechanical practice of physic, prop. XIII. Riverius and Etmuller both recommend blisters in high terms; Alpinus is against them. Percival of Manchester, (Essays, vol. I. p. 133,) is of opinion that they should be employed with caution. Lettsem, though he thinks blisters generally useless in fevers, gives more than one example of their apparent utility. See his Memoirs of the general dispensary, p. 44.

† There are some observations respecting their employment, in M'Bride's methodical introduction to the theory and practice of physic, Lond. 1772, p. 329.

‡ De Haen yields his powerful testimony as to the efficacy of free exposure to the fresh air, not omitting other means, in preventing the eruption and the continuance of petechiæ. Ratio medendi, Lug. Bat. 1772, pars prima, de feb. malig. cap. IX.

§ In omni febre plurimum interest, ut aër cubiculi sit purissimus. Nam auram salubrem hauriendo maxime recreantur animi; et vereor ne quidam ægroti non tam morbo suo perierint, quam halitibus putribus, quos discuti vetuit præpostera amicorum cura. Heberden. Comment. de morbor. hist. et curat. cap. XXXVII. de febre.

§ The wards of hospitals are sometimes very insufficiently ventilated. Occasionally a patient is so much disturbed and annoyed on such occasions, as to incur some risk in consequence. I have already remarked, that it has been supposed that the stimulus of the fresh air, under such circumstances, may, in a few instances, prove injurious. In some cases, the removal of a patient from his own home, produces considerable moral depression



receive a full supply of this vital fluid, would be preferable to hospitals, during summer, and pending the existence of epidemics. The hospital tents which are used in our military service might be extended to civil purposes. I conceive that it is a practical error, to heap up patients in a fever-hospital, and fraught with evil in more ways than one. However this may be, patients in every stage of fever—and if I could make a distinction, especially in the last, should receive a constant supply of pure fresh air.

The temperature should be carefully regulated. In the early stages of fever, a patient will endure a degree of cold with impunity, perhaps with advantage, which would afterwards prove highly prejudicial. In winter, the temperature of the apartment of a person in the latter stages of fever, may be raised to sixty degrees of Fahrenheit: nurses and friends will frequently however, make a room much warmer than this, if permitted. The patient should not be exposed to a chilling draught—this may be warded off by a screen. The curtains of his bed should be taken off or pinned up, and the door kept constantly open in winter—in summer, both door and windows. I shall merely add to the preceding points, that if the room be heated too high, or the air not often enough changed, the latter will inevitably lose many of its most beneficial qualities.

In cases of great prostration, and when the fever has been prolonged, a little nourishment will sometimes prove advantageous; in the generality of cases however, I venture upon its administration with great reserve, before convalescence has set in.\* The most appropriate articles will be gruel, sago, arrow-root, roasted apples, a little toast and wine, tea, or weak soup, ripe fruit and jellies. If we observe that any of these articles disagree, they must be immediately discontinued. Some patients however, in spite of all that we can do for them, will sink at this period; but when we have done our

\* Cheyne has properly remarked, that in nervous or malignant fevers, as he styles them, the food, both solid and fluid, at the period most proper to exhibit it, “may be commonly allowed a little stronger and higher than in inflammatory fevers;” but in medicine, every thing requires the utmost prudence and circumspection. See the English malady, chap. XI. on nervous fevers, etc. p. 232.

utmost in their behalf, we can have nothing with which to reproach ourselves.

When the complaint subsides, much caution will be requisite during the period of convalescence; indeed, it frequently requires not less skill and attention than the preceding fever. The duration of this stage, as Percival observes, is very variable, and depends on a variety of circumstances, such as the severity of the previous disease, the nature of the treatment, and the habits and constitution of the patient. The premature or improper exhibition of food, will often cause a relapse; and this is so much the more frequently to be dreaded, the earlier the previous fever has been resolved. Another far from uncommon source of relapse, is premature exertion of mind or body; patients for example, are frequently desirous of getting up sooner than is expedient. Nurses and friends too often contravene the advice of the physician, whose services however, are sometimes dispensed with before the patient is out of danger; hence, if possible, no practitioner should leave his patient till all risk has disappeared. Notwithstanding the possible miscalculation of his motives by ignorant or mercenary persons, the practitioner should not cease his attendance under hazardous circumstances, without a candid statement to the friends, of the possible consequences of his absence. If ever the rule of "*festina lente*" be applicable, it is here; by caution and slowness, we can hardly ever do harm, but an opposite line of conduct is attended with no small risk. Pring gives an instance, in which a single full meal, after the long abstinence required by the complaint, was followed in a few hours by fatal apoplexy.\* The patient may begin with a little weak chicken-broth or beef-tea, and a thin slice of stale bread or toast, for dinner. He may have bread and weak tea for breakfast, and the same, or gruel, for supper.† After a day or two, he may get an

\* Exposition of the principles of pathology, Lond. 1823, p. 84.

† In Scotland and Ireland, oat-meal well boiled in water, and eaten with milk, is employed very advantageously after fever, especially by the working classes, though not confined to them; in other countries, Indian-corn meal, or polenta, prepared in the same manner, is sometimes used for a like purpose—both form a light and sufficiently nourishing food.



egg and some jelly in addition ; and when four or five days elapse, and nothing seems to forbid it, he may receive a small bit of chicken, minced very small, and eaten with bread or a potato. The employment of wine and water, and a more liberal supply of fleshmeat, will hinge upon many circumstances, such as the degree of prostration of the patient, and the nature and duration of his previous illness. We should advance very cautiously, step by step, feeling our way, giving only a very small quantity of more nourishing food at first, and never allowing a full meal. I have found a few ounces of wine, or a little malt liquor, very serviceable during the convalescence. If tonics are indicated, a preparation of bark may be given, or a grateful bitter, with or without a small proportion of some neutral salt. I take good care to prevent constipation from ever taking place during the convalescence. When the patient first leaves his bed, he should be contented with sitting up twice a day while it is making. He may afterwards dress, and walk a little about his room. He should be able to go about the house for some time before he ventures out, which should be with many precautions and great deliberation, especially in winter. His ordinary occupations should be only very gradually resumed, as mischief may arise from too early attention to business.

I have seen a kind of fatuity, with loss of memory, which is also noticed by Frank, continue for some time after fever, in which the prostration had been considerable ; it is not of common occurrence, nor does it ever persist after the return of the strength.\* When the convalescent gets tolerably round, as the popular phrase goes, a warm or tepid bath may prove advantageous. When this period has been properly managed, and the recovery proves complete, the feelings of the patient are frequently of a very exhilarating description. All his sensations are delightful ; he seems to have taken a new lease of his existence, and the varied phenomena of nature burst

\* Illi per longum tempus ammissas vix recuperare queunt vires, ac mente non minus, quam corpore, diutius hebescent, praeteritorum cum difficultate recordantur, et fatuitate quadam amicos, restitutis viribus sponte cessetura, terrent, § 87. J. P. Frank, de curand. hom. morb.—Stupiditatem a morbo reliquam surdasque aures, lenia interdum evacuantia, vel sub majori debilitate, roborantia, tempusque ipsum saepissime tollunt, § 97.

upon his perceptions with the vividness and freshness of childhood. Such a circumstance certainly affords a strong and beautiful illustration of the benevolent providence of God, who seems to have provided us with this agreeable change, as a kind of compensation for previous suffering: indeed, relief from pain of every description, is a highly pleasurable condition. I have more than once experienced this beneficent result in my own person; and on one occasion in particular, after a severe fever, in New-York, the grateful sensations which I felt after recovery, were such as no language could do justice to.

We must avoid running into the opposite extreme of starving the patient, after the risk of relapse has wholly abated; I have seen people in hospitals kept on a regimen at this period, quite insufficient within any reasonable period, of recovering them from the anemic weakness, to which their complaint had necessarily reduced them.

When a relapse ensues, we are to treat it as we would the original disease, recollecting however, that the urgency of the case, is in general, much less.\* Unless in unfortunate instances, which happen often enough to keep us on the watch however, relapses generally prove neither obstinate nor dangerous in these climates, the fever seldom lasting more than four or five days. It was observed during the Irish epidemy, that relapses became exceedingly frequent when the first fever was short, and that, without any imaginable imprudence on the part of patient or attendants; hence, such relapses were very naturally, and I think justly enough, looked upon as a peculiarity of the disease. Such however, is not the case in ordinary circumstances, and the practitioner must never forget that a relapse may cost a patient his life. An observation of considerable importance is made by O'Brian, who states that he was generally able to remove the fever which supervenes upon a relapse, by the administration of an emetic. There is no reason indeed, why it should prove less efficient in this case, than during the onset of fever itself.† In warm countries, relapses are peculiarly dangerous; every precaution therefore should be used to pre-

\* Sydenhami op. § 1, cap. IV.

† Transactions of the Irish College of Physicians, vol. I. p. 434.



vent them, by avoiding too early exertion in the sun, and every known exciting cause. Personal experience, and the loss of dear friends who perished in this way, enable me to speak with more decision. When the patient has been long confined to his sick-bed, Naumann advises us to beware of cutting off the frequently confused and entangled hair.—I believe that I have mentioned every circumstance relative to the stage of convalescence which is most necessary to be attended to; but it may be summed up as a general rule, that whatever the patient's habits and mode of life may be, he should return to them with the utmost circumspection.

The considerations which I am now about to discuss, are among the most important that attach to the present disease; for if it be desirable to cure fever, it is much more so to prevent it.\* If the one-half of the human race, as has been frequently alleged, die of fever in some of its forms—and if from ten to twenty per cent, of the whole number attacked perish, of what vast importance does it become, to lessen the frequency of so destructive a disease, which, as a judicious modern writer observes, so frequently cuts short the term of human life, just as adolescence is ripening into manhood.†

\* Les vrais moyens préservatifs de ces fièvres doivent être prises dans l'histoire des lois et des institutions de divers peuples, soit anciens soit modernes, sur divers objets de salubrité. La fréquence de ces fièvres est plus grande *suivant que la civilisation de ces peuples a été moins avancée*. Pinel, Nosographie philosophique, Tome prem. p. 177. Who will not concur in the remarks just quoted from this most enlightened writer?

A practitioner of vast observation well observes—"Sed longe majus a perito medico petendum consilium ad arcendum ejusmodi morbum, quippe quod multo tutius, multoque certiores effectus ipsa curatione. Hoffmann, Med. rat. Tom. IV, de feb. petech. p. 264.—Non satis colitur prophylactica medicina, bene multi sunt morbi quos attente consideranti prævidere licerit pluribus diebus ante primum impetum, et persuasum habeo, morbum prævisum vel omnino præscindi posse vel saltem mitiorem reddi. Tissot, Dissertatio de febribus biliosis, Lausannæ, 1758, p. 170.

† Smith's treatise on fever, p. 424.

Pujol observes—"On voit mourir avec la fièvre presque tous les hommes qui ne sont pas enlevés par une mort violente." Œuvres de med. prat. par Boisseau, Tome II. p. 7. This is going almost as far as Willis, who has it—"Nemo sine febre moritur." De anima brutorum, Oxon, 1762, pars secunda, cap. III. p. 387.

Il attaque presque toujours les jeunes gens dans la force de l'âge. Cruveilhier, Anat. pathol. septième livraison. C'est évidemment, il ne faut pas se lasser de le répéter, c'est par l'encéphalite (fièvre) que périssent presque tous les hommes, à la suite des maladies aiguës. Bégin, Traité de physiologie pathologique, Tome prem. p. 501.

We must all die sometime, it is true, but let us live as long and as well as we can. Fever however, is one of the greatest banes to the certainty of life: no one almost, can calculate upon entire immunity from it; and we are liable, rich and poor, to be carried off by it in a few days, at the most flourishing period of our earthly existence. The poor are altogether more subject to this disease than the rich, although the latter are far from being exempt; it is more liable however, to spread from below upwards, and perhaps the greatest danger to the rich, arises from the susceptibility of the poor. We never hear of an epidemic fever existing solely among the rich; such an anomaly has never occurred. Even when fever attacks a member of a family in easy circumstances, it seldom or never spreads. May we not fairly conclude from this, that fever might be nearly exterminated, by a greater attention to the physical, moral, and intellectual wants of the productive or working classes—such at least, is my opinion.\* If we could elevate these classes above their present generally depressed condition—if we could inspire them with a higher sense of decency, morality, self-respect, and a greater love for useful knowledge—if we could make the heads of families provident, temperate, and industrious—if a better legal provision were made for the destitute and the unemployed—and if the surest foundation for such desirable changes, in the form of a good and useful education, were universally provided for the youth of both sexes, independent of sect or creed, I conceive that epidemic fever would entirely cease among the working classes, and that although sporadic cases might occasionally occur, they would not spread.† We do not hear of fever extending

*Plurimosque mortales medio ætatis, atque roboris vigore tollunt. Jodoci Lommii, De curand. feb. contin. Rotterdami, 1733, cap. I.*

\* A truly excellent writer and good man, observes on this head—"Parum aegrotant, quae naturali instinctu veguntur, animalia, victuque simpliciori contenta, corpus in eodem quaerendo exercent, labore non exhaustiunt, passionibus animi necessariis, sulutaribus concutiuntur, et quae interdum detrita fuerant, ad noctem quietam componunt. J. P. Frank, *De curand. hominum morbis*, lib. I. de feb. Introductio.

† The excellent writers on epidemic fever in the Dublin hospital reports, and in the Transactions of the King and Queen's College of Physicians in Ireland, as well as others, whose names I have frequently had occasion to mention, dwell forcibly on the peculiar frequency, and consequent destructiveness of fever in Ireland. They invariably refer it to the dirt, penury, and wretched condition of the working-classes



among the inhabitants of a spacious well-built square, but what is more common among the narrow, and too often filthy habitations of the poor.\*

Would it be to encroach on the liberties of the subject, were greedy speculators hindered from erecting the crowded and miserable dens which they do? Should not legal measures be taken to prevent the construction of houses and rooms for hire, of less than certain given dimensions, and without certain conveniences, and so many yards of ground both in front and rear, to allow the light and air to penetrate to the inhabitants and their children, and to prevent the constant inhalation of a polluted atmosphere? In very many towns, the disgusting, dangerous, and degrading practice of throwing down ordure before the doors, still prevails in the narrow streets and lanes, the inhabitants not being provided with those appliances of modern civilization, which should no where be deficient. Roomy and capacious sewers should be every where constructed, and provided with a running stream of water through them, whether artificial or otherwise; and carts and scavengers should ply the streets every day at an early hour, to remove nuisances.† Some means should be taken to enforce domestic cleanliness and ventilation; the exertions of the clergy and of voluntary associations, might be made effective in this way. Every epidemic calls forth an abundance of sanitary zeal, houses are cleansed and

in town and country; and with one voice proclaim the impossibility of banishing this plague which yearly almost, by the frequent destruction of the heads of families, carries desolation into the homes of thousands, unless some means are resorted to, to banish ignorance, procure employment for the people, and elevate their habits. For my part, I fully concur in all they have said, and may just ask, whether such crying evils are not worthy of the immediate and energetic attention of all those who have the power or the inclination to better the condition of the community. I shall only add, in the words of a humane and highly intelligent writer, who was well acquainted with the state of the poor—"Though I wish not to accuse individuals, yet truth obliges me to say, that evils exist somewhere which require immediate reformation." Lettsom's memoirs of the dispensary, Introduction, p. 12.

\* There are excellent remarks on the prevalence of fever in large towns, in Ferriar's medical histories and reflections, vol. II. p. 177.

† Every one is aware of the anxious attention which the Romans paid to their sewers, so convinced were they, that their proper construction tended to the preservation of the public health.

whitewashed, streets are sedulously swept, and the poor are provided with food and clothing, but so soon as the sickness wears out, these exertions are discontinued. Now it is obvious, that, if in place of being limited to a point, a constant provision were made for such important objects, their utility would be vastly multiplied.

The failure of the current harvest is a frequent source of the most devastating epidemics; and in countries where the inhabitants live principally on vegetables, and subsist on the produce of the soil from year to year, and from hand to mouth, the consequences of a bad or missing crop, are sometimes frightful.\* Such results have frequently attended the failure of the rice and potato crops. Could nothing be done to mitigate so great an evil as the liability to epidemics from such sources, at least in Ireland? If the people could be induced to raise more corn, and consume more bread, it would tend to good. Potatoes, unless converted into starch, or flour—or dried, processes hardly applicable on an extensive scale, will not keep a whole year; grain however, with proper precautions, may be preserved for an indefinite period. The speculations of the monopolists are frequently useful, by hoarding up the corn; but independent of some disadvantages, they are insufficient for the purpose, in times of great pressure. Wheat and other grain, imported or otherwise, might be amassed by government, and a sixth part sold and replaced every year, say at a moderate price. In this way, a large stock would be constantly on hand, in quantities more than sufficient I presume, to meet the most serious failures. The grain could be preserved with certainty, in reservoirs lined with sheet iron, and sealed with plaster of Paris, so that neither air, nor moisture, nor vermin, could assail it: the only previous precaution necessary, would be to dry it well. The yearly sales, which would be merely for the purpose of hindering the accumulation of the stock, could probably be so regulated, as not to interfere with private industry. I am not perhaps, enough of a political economist to decide on the practicability of such measures, but I know, that in 1817-18, eighty thousand per-

\* The great Irish epidemy in 1817, was mainly promoted by a defective harvest.



sons died in Ireland of fever—and that the poor inhabitants then, and frequently, were fain to have recourse to the wild plants of the fields and of the sea-shore, to furnish a scanty sustenance to sinking nature. The loss by death however, is not the only evil during an epidemic; let us also consider the sufferings of the survivors, and the universal terror and suspension of human industry which is occasioned by it. These results are so serious, as fully to justify, I conceive, any well-meant speculation, on the best means of preventing the origin of epidemic fever from starvation, and the consequent waste of human life, and infliction of such an amount of needless misery.

The production of epidemic typhus from military operations, has been very frequent; the destruction of such masses of men, physically speaking, the elect of the population, by fever, has been very great, and has often been attended with the extension of the disease, to the people at large. Until circumstances, and particularly the progress and diffusion of moral feeling and knowledge, and the improvement to the last degree, in the effectiveness of the machinery used for human destruction, have advanced so far, as to make men generally conscious of the frightful absurdity, of committing such wholesale slaughter on their species, I conceive it fruitless to urge any thing against the continuance of the savage and senseless practice. So long as war continues to be made however, medical men attached to armies—by the application of a rational system of military hygiene—by enforcing personal cleanliness, the choice so far as it is practicable, of healthy locations for camps, barracks, and fortresses, and the erection of airy and capacious hospitals, may do much to prevent or limit the spread of epidemic fever among the troops committed to their care.\* Every one knows the evil influence on the soldier's health, of exile—“*τῆλε φίλων καὶ πατρίδος αἴης*,” low

\* Rush says that the typhus produced in the American hospitals, killed more soldiers than the sword. Inquiry, vol. I. p. 212. Desgennettes, Larrey, Hennen, and others, have also left us feeling pictures of the destructive results of crowded hospitals. Speaking of the ravages of hospital gangrene, a purely hospital disease, John Bell remarks—that the hospital becomes a house of death, and that the men would be better any where out of it; a waste house or a dunghill are preferable. As this writer observes—sixty soldiers cost about fifteen thousand pounds, so that every expense, even in a pecuniary point of view, should be incurred that would tend to preserve their health. Works, by Charles Bell, Lond. 1826, vol. I. p. 164, et seq.

spirits, inferior, or deficient food, wet, dirty, and crowded accommodations, scanty clothing, cold and moisture; circumstances, all of which, pave the way for epidemic fever.\* Tents, I believe, are less crowded than formerly, and smaller; more care is paid to the soldier's comforts; the camp regulations too, are better. Rational amusement should be provided for private soldiers—they would then rush less frequently into ruinous debauchery as a solace against mental weariness. Surely, the disgusting practice of sleeping two in a bed, to which British soldiers only I believe, are condemned, must tend to increase and propagate sickness. The comforts of the poor fellows are too few; as the instruments of our ambition, their wants at least, should be attended to. It is remarkable that the worst ships are commonly employed as transports; and they are often so crowded as to become a not uncommon source, of loss of life, by the generation of fever in them.

The health of sailors will be promoted by the observation of similar rules, taking into consideration the difference of their position. Ships of war however, at the present time, seldom prove the birth-place of epidemic fever in temperate climates; when they proceed to warm ones nevertheless, the admirable system of cleanliness which prevails on board, cannot, owing to the present construction of vessels, reach a multitude of recesses, which, by affording a lodgment for vermin, moisture, and various filth, cause sickening emanations, and sometimes frequent and fatal periodic fevers. Vessels not unfrequently, are in unhealthy spots, and the men permitted to go ashore, with perhaps too little precaution. Their occupations on land may be readily imagined; and thus from the preceding causes, as well as from others, our ships of war have sometimes lost the greater part of their complement in foreign ports. If

\* As to the influence of insufficient clothing, Rush, (*Op. cit.* p. 210,) says, that the simple precaution of wearing flannel waistcoats, produced a striking exemption from disease.

Larrey in his *Mémoires de chirurgie militaire*, gives numerous details of the ravages committed by fever among the French troops in hospitals and otherwise. Desgenettes lost 15,000 men at Torgau in a few months, from typhus. But one of the most horrible examples that I know, of the destruction sometimes occurring in military hospitals, is told by Howard. This illustrious person, writing from Moscow, states, that 70,000 Russian recruits had perished in the space of one year, in the hospitals. *Vid.* Aikin's life of Howard.



a short-service bill could be passed, and greater inducements held out for persons of steady character, to enter our army and navy, the brutal custom of flogging being also abolished, I think it is reasonable to suppose that our men would become more amenable to discipline; and from this, and the diminished inclination to indulge in ruinous excesses which would necessarily follow, much less subject to disease.

If a short and sufficiently popular sanatory code, could be drawn up and extensively circulated among the people, giving brief and plain instructions as to the preservation of health, much good would result.\* Intemperance is an incessant source of every form of disease; how often does it lead to fever, and indeed to most maladies. Would it be beneath the attention of the clergy of the different denominations, to make themselves acquainted with the contents of a few of the best works on the preservation of health, and to aid in some measure, by diffusing a knowledge of these among their parishioners; surely much good might be wrought in this way.

Ought there not be such a thing as a minister of public health—as there are for other but less important purposes, among our government functionaries. Such an office would be one of great general utility; it should of course, be filled by a medical man. The situation would be a kind of set-off to the elevation attainable by members of the two other leading professions, and would certainly be as well merited. A medical police, not interfering with private practitioners, should be ramified through the country; and the knowledge which they would diffuse,

\* There is a little book which I have read with great pleasure, and which I take the liberty of recommending to such of my professional brethren as have not met with it, I mean the *Gesundheitskatechismus*, or catechism of health, by Dr. Faust. The work is deservedly popular in Germany; the edition which I possess, is the eleventh. It is clearly and intelligibly written; and if somebody would take the trouble of giving us an English version in the same simple style as the original, making a few slight alterations, and adding some notes, so as to adapt it to popular use at a low price, I think he would be conferring a public benefit. I believe that a translation has appeared in the United States, but I have not seen it; I am not aware of any avowed translation that has been published in this country. Sinclair's excellent Code of health is somewhat too large for general circulation.

One of the best, and for its time, most enlightened books that I have ever perused, is Cheyne on health and longevity. Very recently an excellent little work has appeared on this subject, entitled Combe's principles of physiology, which is well worthy of general circulation.

and the reformation which they would have it in their power to effect, would go far to assist in preventing the recurrence of the destructive and wide-spreading fever-epidemics, which have so often taken place. Such epidemics do not arise from hidden or unseen causes, and they may be prevented if we will but make use of the means which lie within our grasp, and which are undoubtedly permitted by the Deity to be employed in combating evils, which perhaps, it is not going too far to say, are only permitted to exist for our advantage. Certainly, the numerous benefits which would accrue from the suppression of epidemics, by the means already pointed out, would go far to prove the position here laid down.

The lessening of the frequency of fever, not epidemic, will depend very much upon the few, observing the rules here recommended to the many. Such fevers frequently arise from imprudence, and more frequently still, from the occurrence of those hardships which the constitution of society inflicts upon working men, for such are the principal sufferers from sporadic as well as epidemic fevers.

It now remains to make a few observations on the means of remedying the existence and dissemination of fever from contagion. When the fever has once arisen, we may try to stop its progress if we see it in the very beginning, by an emetic, as already pointed out; if this do not suffice, we must have recourse to the medication applicable to the particular form of the disease which occurs. A variety of prophylactic measures on a small scale, have been recommended for the promotion of individual security; they are in general however, nearly effete, and can hardly be recommended by a rational practitioner, unless by way of keeping up the courage of the person supposed to be in danger. Among the means alluded to, are camphor, aromatic vinegar, disinfecting bottles, tobacco-smoke, and so forth. It has been seriously stated, that when the mouth is slightly affected with mercury, there is little risk of taking fever by infection; persons however, under salivation, as I have already mentioned, have been known to contract fever—even were it more certain, the remedy would be generally absurd and impracticable.\* The best

\* The celebrated Hildenbrand asserts, that diarrhoea and phthisis exempt from fever. Perhaps this is true as a general rule, but I have seen a few instances in



preservatives are strict cleanliness, the avoidance of all unnecessary exposure to cold, wet, fatigue, or infection—a plain and sufficiently nutritive food, without excess, together with cheerfulness and equanimity of mind. The occasional calm contemplation of death, as the necessary termination of our mortal being, and the precursor of a higher stage of existence, and the habitual state of preparation to which such a frame of mind helps to lead us, together with the conviction, that here and hereafter, we are under the incessant providence of a good and wise God, are considerations, which I humbly conceive, have a strong tendency to enable a man to perform his duty, whether as physician, friend, the head of a family, or a member of society, efficiently and cheerfully, as well as to preserve him from the inroads of disease.\*

The advantages of ventilation and cleanliness, I have already dwelt upon. As a matter of ordinary propriety, I always rinse my mouth and wash my hands, after leaving the fever wards; I presume however, that the prophylactic virtues of such a practice are not very great. I do not know whether the saliva, as some assert, can prove a vehicle for receiving fever-poison; but perhaps it is as well not to swallow it, while in close contact with the disease. One need not inhale unnecessarily, the exhalations from the patient's body, or his breath, or his excretions; and full inspirations are perhaps better not made, when close to the bedside.† I

which persons affected with phthisis have contracted fever. There is one, this moment before my eyes, in which the subject of the fever had been previously labouring for some months, under all the essentials of phthisis. The view which I here take on this point is also corroborated by Alison—"A chronic disease already existing, at least if it be one which is attended with febrile excitement, such as phthisis, seems to be, to a certain degree, though not uniformly, a protection against attacks of fever." *Outlines of Pathology*, p. 191.

\* The following observation of the wise and good Dr. Hartly is so excellent, that I may perhaps, be permitted to embody it here—"Whatever be our doubts, fears, or anxieties, whether selfish or social, whether for time or eternity, our only hope and refuge must be in the infinite power, knowledge, and goodness of God." *Observations on Man*, Part II. Introduction.

† Cruveilhier, *Anat. pathol. septième livraison*, considers the lungs as the medium through which the fever-poison affects the system. On the presumption that the disease may be propagated by an infectious emanation, the vast surface of the pulmonary cells would afford ample scope for its operation. On the other hand, Hartmann, (*Theorie des ansteckenden Typhus*,) thinks that the infection operates through

think it is a good rule not to go much among patients when fasting: I have however, visited my fever-wards for months, before breakfast with impunity. The practice however, is unpleasant, owing to the disagreeable odours which are apt to affect an empty stomach, and to produce loss of appetite, as I have often experienced. I conceive that the risk of infection in well-ventilated hospitals is comparatively small; the nurses however, and the medical officers, my predecessors, attached to the institution which I attend, have I believe, all had fever. Three of the medical attendants, two physicians and an assistant-apothecary, died within a few years; as for myself, I have never contracted fever in the place, but I have several times had it on other occasions.—I conceive that the risk would be reduced to a minimum, if ventilators were placed over every bed, somewhat in the form of an oblong funnel; these might lead to pipes, terminating in a main tube, one extremity of which communicated with a fire, and the other with the open air, or with the open air alone.\* It was observed that the nurses and physicians attached to some wards in an hospital in Dublin, provided with an apparatus of this kind, were never affected, whereas no other hospital not arranged in this manner, could boast of a similar exemption.† When one reflects upon the number of physicians and other attendants attached to fever-hospitals, who have been swept off, one would think that motives of ordinary consideration towards the services of such individuals, independent of the common dictates of humanity, would prove sufficient inducements to ensure the best possible construction of these institutions, and thereby prevent their service from being

the medium of the skin, but principally on the mucous membrane of the nares and fauces.

\* Vid. Percival's essays, vol. I. on the internal regulation of hospitals, p. 172.

† The advantages of ventilation have been known from a very early period—indeed one would think that they should be self-evident to thinking men in all times. An old writer observes—“*Nam non est parva conjectura, quòd cùm quis in una domo putridè febricitat, multi consequentèr ægrotent simul, serpente videlicèt malo, et alios inficiente, qua de causa fenestræ cubiculi mane et vesperi debent aperiri, ut innovetur aer, et noxius e doma expiret, et quòd ægri è domo una in aliam permutentur, et alloquentes illum intentè non aspiciant, et fugiant ægri tetram, et virulentam auram.*” Zacutus Lusitanas, *Medicorum principum historia*. Coloniae Agrippinæ, 1629, p. 598.



attended with such a sacrifice of valuable lives. The well-being of the patients however, would also be promoted by the arrangement here recommended.

It only remains now to mention a number of disinfecting means not yet noticed. Cleanliness and ventilation, have already, been several times spoken of. Vinegar, large fires, the combustion of gunpowder, and fumigation with muriatic and sulphurous acids, at different times strongly recommended, are now, all except the first, nearly disused. The exposure of the articles to be purified, to an elevated temperature for some hours, is an excellent means of purification. The most efficient agent unquestionably, is gaseous chlorine, commonly produced through the medium of a mixture of oxide of manganese, common salt, and sulphuric acid, occasionally stirred. Chlorine, partially fixed in solution, with lime or an alkali, is also frequently employed. This substance adequately concentrated, and applied to the contagious principle for a sufficient length of time, effectually decomposes and destroys it, as some suppose, by abstracting its hydrogen. For my part, as Johnson and Hennin have well remarked, I think that fresh air, and soap and water, are to be preferred in a sick room or the wards of an hospital; but empty apartments, previously occupied by fever patients, and well washed and ventilated both before and after—also clothes, bedding, utensils, and furniture, will probably, after a sufficient alternation of these means, be effectually disinfected.\* If vessels containing a feeble chlorine mixture, produce confidence among those exposed to contagion, they may be left in passages and on landing-places, but otherwise, I consider them a piece of useless ostentation, and much inferior to fresh air. Their presence however, as the emblems of danger, sometimes inspires alarm. The perfume of aromatic or other vinegar, is sometimes desired by those who visit the sick room; the use of this, or any other scent however, should never supersede strict

\* Experiments, says Johnson, have proved that this contagion, (i. e. that of fever,) when diluted with pure atmospheric air, becomes harmless at the distance of a few yards, perhaps of a few feet; and hence the surest means of preventing its dissemination, are cleanliness and ventilation. Influence of tropical climates on European constitutions, part II. § 1. on fever in general. See also Hennin's military surgery, Lond. 1829, p. 204.

cleanliness. Chlorine mixtures were at one time in great vogue, and much more employed than at present; their acknowledged utility however, for various purposes of disinfection and cleanliness, is equally undisputed and indisputable.\*

I have now come to a termination on the subject of fever, and concluded, to the best of my power, the task which I had proposed to myself. I am sensible of the vastness and importance of the questions which I have successively attempted to discuss, and am fully aware of my own incapacity to render them all the justice which they deserve. I have endeavoured however, to think and decide for myself, but with the deference towards others, which their abilities and acquirements merited at my hands. Nevertheless, in a field of inquiry so extensive, there is room for those who glean, as well as those who reap; and where facts are of such golden value, the humblest contributor may presume to lay his mite on the altar of science. And now, having concluded my little work, I may be permitted to close with the invocation of Rhazes: “Nunc igitur, quemadmodum percurrimus omnes articulos nobismet propositos in curatione hujus morbi, et præservatione ab illo, hic nostrum sermonem præcidamus—Intellectus autem Largitori laus sit sine fine, qua ille est dignissimus et merentissimus.”†

\* There is an excellent article on the various modes of disinfection, in a very reputable publication, the *Medicinische Zeitung*, dritter Jahrgang, No. 26, herausgegeben von dem Verein für Heilkunde in Preussen. The paper is by Link, and is entitled—“Ueber Disinfectionsmittel und deren Anwendung bei ansteckenden Krankheiten.”

† Rhazes, cura Channing. Londini, 1766.

FINIS.



# INDEX.

	Page		Page
ABSCCESS - - -	124, 282, 292, 501	CALCULI - - -	318
Acarus dysentericus - - -	250	Cancer - - -	-229, 237, 355
Acarus scabiei - - -	411	Carbuncle - - -	48
Acephalocyst - - -	152, 503	Cardialgia - - -	240
Acne - - -	401	Carditis - - -	165
Agnesia - - -	347	Caries - - -	224, 439
Ague - - -	26	Catalepsy - - -	538
Amaurosis - - -	475	Catarrh - - -	102
Amenorrhœa - - -	362	Cerebritis - - -	490
Amentia - - -	542	Cerebellitis - - -	496
Anemia - - -	215	Chancre - - -	334
Anaphrodisia - - -	347	Chemosis - - -	465
Anasarca - - -	429	Chicken-pox - - -	68
Anchylosis - - -	443	Chigre - - -	425
Aneurism - - -	197	Chilblain - - -	88, 161
Angina - - -	230	Chlorosis - - -	376
Angina gangrenosa - - -	83	Cholecystitis - - -	281
Angina pectoris - - -	192	Cholera morbus - - -	56
Angina stridula - - -	96, 136	Chorea - - -	538
Anthrax - - -	427	Cirrhosis - - -	283
Apoplexy - - -	508	Cirsocele - - -	211
Aptha - - -	226	Colic - - -	259
Arachnitis - - -	490	Colitis - - -	247
Arthritis - - -	448	Colloid - - -	237
Ascaris lumbricoides - - -	276	Constipation - - -	239, 256
Ascaris vermicularis - - -	275	Consumption - - -	138
Ascites - - -	266	Convulsions - - -	222, 505, 536, 537
Asphyxia - - -	159	Corona veneris - - -	338
Asthma - - -	133	Coryza - - -	103
Atresia - - -	472	Cow-pox - - -	72
		Cramp in the stomach - - -	239
BARBADOES-LEG - - -	391	Croup - - -	94
Beriberi - - -	431	Crusta lactea - - -	399
Biliary calculi - - -	287	Cutis anserina - - -	3
Black vomit - - -	35	Cyanosis - - -	190
Bladdery fever - - -	412	Cuphosis - - -	445
Blennorrhœa - - -	329	Cynanche - - -	230
Blepharitis - - -	463	Cynorexia - - -	241
Bloody flux - - -	247	Cysticercus - - -	503
Blue skin - - -	190	Cystitis - - -	314
Boil - - -	427		
Bothriocephalus - - -	276	DEAFNESS - - -	485
Bronchitis - - -	102	Deliquium - - -	195
Bronchocele - - -	386	Delirium tremens - - -	508
Bubo - - -	47, 336	Dementia - - -	553
Bulam fever - - -	37	Dentition - - -	219
Bulimia - - -	241	Diabetes - - -	309

	Page		Page
Diarrhœa - - - - -	251	HEARTBURN - - - - -	241
Diphtheritis - - - - -	83	Hectic fever - - - - -	139
Dracunculus - - - - -	425	Hematemesis - - - - -	237
Dropsy - - - - -	266, 429	Hemeralopia - - - - -	475
Dysentery - - - - -	247	Hemiopia - - - - -	475
Dysmenorrhœa - - - - -	364	Hematuria - - - - -	303
Dyspepsia - - - - -	241	Hemoptysis - - - - -	140
Dysphagia - - - - -	231, 234	Hemorrhage - - - - -	370
EAR-ACHE - - - - -	484	Hemorrhoids - - - - -	272
Ecthyma - - - - -	397	Hepatitis - - - - -	280
Eczema - - - - -	406	Herpes - - - - -	408
Elephantiasis Arabum - - - - -	393	Hooping-cough - - - - -	130
Elephantiasis Græcorum - - - - -	421	Hydatids - - - - -	152, 284, 312, 519
Emphysema - - - - -	109	Hendrencephalus - - - - -	500, 507
Empyema - - - - -	115, 121	Hydrocephalus - - - - -	498
Encephalitis - - - - -	490	Hydrometra - - - - -	360
Endocarditis - - - - -	170	Hydrophobia - - - - -	394
Enteritis - - - - -	256	Hydrophoria - - - - -	374
Enterio-malaxis - - - - -	236	Hydrorachis - - - - -	519
Entozoa - - - - -	275	Hydrothorax - - - - -	119, 266, 429
English cholera - - - - -	251	Hypertrophy of the heart - - - - -	182
Ephemera sudatoria - - - - -	60	Hypochondriasis - - - - -	551
Ephialtes - - - - -	537	Hysteria - - - - -	378
Epigastric pulsation - - - - -	201	ICHTHYOSIS - - - - -	423
Epilepsy - - - - -	533	Icterus - - - - -	285
Epizoa - - - - -	424	Ileus - - - - -	257
Epulis - - - - -	225	Impetigo - - - - -	399
Erotomania - - - - -	348	Impotence - - - - -	347
Erysipelas - - - - -	86	Incontinence of urine - - - - -	307
Erythema - - - - -	88	Incubus - - - - -	537
Esophagitis - - - - -	231	Indigestion - - - - -	239
Essera - - - - -	92	Influenza - - - - -	109
FALLING-SICKNESS - - - - -	533	Inoculation - - - - -	71
Fever - - - - -	1	Insanity - - - - -	542
Fluor albus - - - - -	371	Intermittent fever - - - - -	26
Framboesia - - - - -	421	Intertrigo - - - - -	88
Fungus hematodes - - - - -	238	Intestinal concretions - - - - -	241
Furuncle - - - - -	427	Intussusception - - - - -	258
GALL-STONES - - - - -	287	Iritis - - - - -	471
Gangrene - - - - -	161	Ischuria renalis - - - - -	307
Gastralgia - - - - -	240	Itch - - - - -	410
Gastritis - - - - -	234	JAUNDICE - - - - -	285
Gastrodynia - - - - -	240	KERATITIS - - - - -	469
Gastro-malaxis - - - - -	235	LARYNGISMUS STRIDULUS - - - - -	96, 136
Glanders - - - - -	392	Laryngitis - - - - -	94
Glaucoma - - - - -	475	Leontiasis - - - - -	421
Glossitis - - - - -	228	Lepa - - - - -	419
Goitre - - - - -	387	Leucorrhœa - - - - -	371
Gonorrhœa - - - - -	329	Lichen - - - - -	414
Gout - - - - -	-194, 458	Lientery - - - - -	251
Granular kidney - - - - -	302	Lordosis - - - - -	445
Gravel - - - - -	318	Lues venerea - - - - -	334
Green-sickness - - - - -	376	Lumbago - - - - -	451
Guinea-worm - - - - -	425	Lumbricus - - - - -	276
Gum-boil - - - - -	224	Lupus - - - - -	489
Gutta serena - - - - -	475	Lymphatitis - - - - -	391



	Page		Page
MALACIA - - - -	241	Peripneumonia notha - - - -	104
Mania - - - - -	542	Peritonitis - - - - -	262
Measles - - - - -	75	Pernio - - - - -	88
Melæna - - - - -	237	Pertussis - - - - -	130
Melanosis - - - - -	152	Pestis - - - - -	47
Meningitis - - - - -	490	Petechiæ - - - - -	3
Menorrhagia - - - - -	365	Pharyngitis - - - - -	231
Mentagra - - - - -	401	Phlebitis - - - - -	204
Metritis - - - - -	350	Phlegmasia dolens - - - - -	205, 350
Mollities ossium - - - - -	447	Phlegmon - - - - -	426
Monomania - - - - -	547	Phlegmonous erysipelas - - - - -	90
Morbilli - - - - -	75	Phrenitis - - - - -	490
Morbus niger - - - - -	237	Phthiriasis - - - - -	424
Morbus cœruleus - - - - -	190	Phthisis - - - - -	138
Mortification - - - - -	161	Phthisis laryngea - - - - -	98
Muco-enteritis - - - - -	247	Pica - - - - -	241
Mumps - - - - -	231	Piles - - - - -	272
Muscæ volitantes - - - - -	475	Pityriasis - - - - -	422
Musculo-enteritis - - - - -	256	Plague - - - - -	47
Myelitis - - - - -	516	Plethora - - - - -	216
		Pleuritis - - - - -	113
NECROSIS - - - - -	439	Pleuro-pneumonia - - - - -	122
Nephritis - - - - -	297	Plica - - - - -	404
Nettlerash - - - - -	92	Pnigophobia - - - - -	192
Neuralgia - - - - -	520	Pneumonia - - - - -	121
Neuritis - - - - -	520	Pneumonia typhodes - - - - -	10, 122
Neuroma - - - - -	520	Podagra - - - - -	458
Nightmare - - - - -	537	Polypus of the uterus - - - - -	359
Noli me tangere - - - - -	489	Pompholyx - - - - -	412
Noma - - - - -	227	Pneumo-hemorrhage - - - - -	142
Nostalgia - - - - -	551	Pneumo-thorax - - - - -	151
Nyctalopia - - - - -	475	Porrigo - - - - -	402
Nymphomania - - - - -	348	Prolapsus of the rectum - - - - -	256
		Prolapsus of the uterus - - - - -	358
ODONTALGIA - - - - -	223	Prostitis - - - - -	317
Oezena - - - - -	486	Prurigo - - - - -	416
Oneirodynia - - - - -	537	Psoitis - - - - -	433, 451
Ophthalmia - - - - -	461	Psora - - - - -	410
Orchitis - - - - -	333	Psoriasis - - - - -	418
Osteitis - - - - -	439	Puerperal fever - - - - -	350
Osteo-malaxis - - - - -	447	Purpura - - - - -	214
Osteo-sarcoma - - - - -	443	Pyelitis - - - - -	300
Otitis - - - - -	482	Pyrosis - - - - -	241
Ovaritis - - - - -	373		
Oxyuris - - - - -	275	QUARTAN - - - - -	26
		Quinsy - - - - -	231
PANARIS - - - - -	426	Quotidian - - - - -	26
Pancreatitis - - - - -	295		
Paralysis - - - - -	510, 517, 524	RABIES - - - - -	394
Parotitis - - - - -	24, 231	Ranula - - - - -	229
Parulis - - - - -	224	Remittent, infantile - - - - -	221
Pectoriloquy - - - - -	150	Remittent, tropical - - - - -	35
Pediculus - - - - -	424	Retention of urine - - - - -	306
Pellagra - - - - -	422	Retinitis - - - - -	472
Pemphigus - - - - -	412	Rachitis - - - - -	447
Pemphigus gangrenosus - - - - -	413	Rheumatism - - - - -	449
Pericarditis - - - - -	167	Rickets - - - - -	447
Perinephritis - - - - -	299	Ringworm - - - - -	403
Periostitis - - - - -	439	Rose - - - - -	86

	Page		Page
Rosalia - - - - -	82	Tetanus - - - - -	521
Rubeola - - - - -	75	Thread-worm - - - - -	275
Rupia - - - - -	397	Thrush - - - - -	226
Rupia escharotica - - - - -	413	Tic douloureux - - - - -	521
SARCOCELE - - - - -	393	Tinea capitis - - - - -	402
Satyriasis - - - - -	348	Tonsillitis - - - - -	230
Scabies - - - - -	410	Toothache - - - - -	223
Scall - - - - -	402	Tracheitis - - - - -	94
Scarlatina - - - - -	78	Trichoma - - - - -	404
Sciatica - - - - -	452	Trichuris - - - - -	276
Scoliosis - - - - -	446	Trismus - - - - -	522
Scorbutus - - - - -	212	Tubercle - 145, 389, 497, 502, 518	
Scrofula - - - - -	385	Typhus - - - - -	1
Sero-enteritis - - - - -	262	URETHRITIS - - - - -	329
Small-pox - - - - -	64	Urodialysis - - - - -	308
Spina bifida - - - - -	519	Urticaria - - - - -	92
Spinal curvature - - - - -	445	Uterine phlebitis - - - - -	205, 350
Spinal irritation - - - - -	444	VACCINATION - - - - -	72
Splenitis - - - - -	291	Vaccineæ - - - - -	72
Stenocardia - - - - -	192	Varicella - - - - -	68
Sterility - - - - -	347	Variola - - - - -	64
Stomacace - - - - -	227	Varix - - - - -	211
Stomatitis - - - - -	226	Varus - - - - -	401
Strongylus - - - - -	313	Vibices - - - - -	3
Struma - - - - -	385	Volvulus - - - - -	257
Sudor Anglicus - - - - -	61	Vomica - - - - -	145
Sun-stroke - - - - -	496	WATER-BRASH - - - - -	241
Suppression of urine - - - - -	307	Weaning-brash - - - - -	251
Sycosis - - - - -	401	Whites - - - - -	371
Syncope - - - - -	195	Whitlow - - - - -	88
Synechia - - - - -	471	Worms - - - - -	275
Syphilis - - - - -	334	YAWS - - - - -	421
TABES mesenterica - - - - -	264	Yellow fever - - - - -	35
Tabes dorsalis - - - - -	348	ZONA - - - - -	409
Tænia - - - - -	276		
Teething - - - - -	219		
Tertian - - - - -	26		



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